

Environments of War

*The Vital Links
between International Humanitarian Law and
Sustainable Development: Is the Natural Environment
Adequately Protected
in Armed Conflict?*

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List of Abbreviations

AP	Protocols Additional 1977 to the Geneva Conventions
API	Additional Protocol I
APII	Additional Protocol II
BCR	Brundtland Commission Report
BTF	Balkans Task Force
BWC	Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (1972)
CA1	Common Article 1 to the Geneva Conventions
CA3	Common Article 3 to the Geneva Conventions
CBD	Convention on Biological Diversity (1992)
CIL	Customary International Law
CWC	Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects (1980)
DU	Depleted Uranium
EI	Environmental Intelligence
EIA	Environmental Impact Assessment
EIS	Environmental Intelligence System
EMT	Environmental Modification Techniques
ENMOD	United Nations Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (1976)
FRD	Fund for Reconciliation and Development
GC	The Geneva Conventions of August 12 1949
GCI	Geneva Convention for The Amelioration of the Condition of Wounded and Sick in Armed Forces in the Field August 12, 1949
GCH	Geneva Convention for The Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea of August 12, 1949
GCHH	Geneva Convention Relative to the Treatment of Prisoners of War of August 12, 1949
GCHV	Geneva Convention Relative to the Protection of Civilian Persons in Time of War of August 12, 1949
GEM	Global Ecological Management
GP	1925 Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare (Geneva Protocol)
HCP	High Contracting Parties
IAC	International Armed Conflict

ICC	International Criminal Court
ICJ	International Court of Justice
ICRC	International Committee of the Red Cross, Red Crescent and Red Crystal
IHL	International Humanitarian Law
ILC	International Law Commission
LDC	Lesser Developed Countries
LOAC	Law of Armed Conflict
NATO	North Atlantic Treaty Organization
NIAC	Non-International Armed Conflict
NGO	Non-Governmental Organization
OAG	Organized Armed Group
PPP	Polluter Pays Principle
SIPRI	Stockholm International Peace Research Institute
SD	Sustainable Development
UN	United Nations
UNCC	United Nations Compensation Commission
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNRWA	United Nations Relief and Works Agency
UK	United Kingdom
US	United States of America
VAVAO	Vietnam Association of Victims of Agent Orange
WCED	World Commission on Environment and Development
WCSD	World Commission on Sustainable Development
WLS	Widespread, Long-term and Severe
WMD	Weapons of Mass Destruction

1. Introduction

In wartime, environmental destruction is expected, but it is also limited. Although nearly a century ago under the Kellogg-Briand Pact¹ initially 15 nations renounced war as an instrument of national policy in their mutual relations, it is still used as a means for handling disputes albeit contrary to the recommended higher-ground of pacific means. Even though tagged as a toothless treaty,² the global community has endured a lurking threat since that moment in time. It is a creeping threat, as humanity has been placed on the alert concerning poor earthly conditions and predictions that will not respect man-made jurisdictional borders.

Heeding the call, the United Nations (UN) requested a new mode of international co-operation to combat a new sort of enemy – degradation of the *natural environment*. In a constructive pursuit toward building the moral and legal basis needed to strengthen the duty to care for the natural world, a variety of political instruments and ecological principles were established to address a new global target – *sustainable development* (SD). Yet it seems reasonable that in order to meet the needs of the present and future generations by grappling with ways one might sustain the natural environment, that foremost, one must untangle and understand what might *destroy* it and ultimately, stand in the way to *protect* it.

With destruction in mind, Jared Diamond reveals five main reasons which have led societies into either regression or collapse. These five reasons are environmental damage, climatic change, hostile neighbors, dependence upon commercial partners and the inability to provide appropriate solutions to problems faced.³ Natural resource scarcity has been repeatedly linked to social

¹ The Kellogg-Briand Pact (1928)

² Britannica Concise Encyclopedia (1928): Kellogg-Briand Pact. [online] <http://www.answers.com/topic/kellogg-briand-pact>, (retrieved 10 June 2011)

³ Nathalie de Pompignan, Ecocide, Online Encyclopedia of Mass Violence, [online], published on 3 November 2007, accessed 9 June 2011, URL : <http://www.massviolence.org/Ecocide>, ISSN 1961-9898

unrest and violent conflict. Additionally, severe environmental consequences of armed conflict hold a reputation to trigger enduring conflict.

Upon cease of hostilities, the condition of the *natural environment* is a vital component to help rebuild societies and sustain human health and livelihoods. Dependent on these environmental conditions, various postwar and sustainable development challenges could arise. It is within this tangled relationship, that military activities and the subsequent conditions for SD become ‘*vitaly linked.*’ For within the sphere of wartime destruction is the hidden potential for a vicious cycle in need of a virtuous overturn. And it is an overturn which requires a *special protection* in order to meet the needs of the present and future generations.

Sustainable development attempts to set *limitations* upon the exploitation of the planet’s natural resources. Throughout the discourse there are vast concerns in relation to transboundary air pollution, radioactive waste, greenhouse gas emissions, climatic change, biodiversity loss, genetic diversity loss and more. Considering that the concept of *ecocide* has its origin in *military activities*, it is reasonable to propose that the threat to sustainable development from such activities could present further *widespread, long-term* and *severe* problems than previously considered. In fact, it might be considered a “sustainability show-stopper” as parts of the world repeatedly suffer from the environmental consequences of war – long after the war ends.

Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.⁴

Whether it is targeted *directly* or *indirectly*, particular methods and means of warfare should be expected to cause disruption, deterioration or destruction to the natural environment. Strikingly however, some scientists claim that particular

⁴ United Nations Conference on Environment and Development (UNCED 1992). Earth Summit Rio de Janeiro. 19th plenary meeting. *Rio Declaration*, Principle 24.

contaminates have threatening life-cycles with no end in sight. International humanitarian law (IHL) asserts that “the right of the belligerents to adopt means of injuring the enemy is not *unlimited*,”⁵ however; some evidence reveals such widespread, long-term and severe damage that one might question where the *limitation* line is drawn.

On the one hand, the international community of states is seemingly striving toward sustainable development. Additionally, it is important to note that “the *only* legitimate object which states should endeavor to accomplish during war is to weaken the *military forces* of the enemy.”⁶ Yet today, there are particular military activities that inflict environmental damage not only on an unprecedented level, but also of an unprecedented kind. From the creation of toxic wastelands to the alteration of humanity’s DNA, “military action is important to the nation – it is the ground of death and life, the path to survival and destruction, claimed Sun Tzu.”⁷ Yet to what extent of destruction and death is an important consideration for international humanitarian law (IHL).

IHL sets strict *limitations* in wartime. And thus far, the International Committee of the Red Cross (ICRC) has stated that the law of armed conflict has been slow to recognize the *environment*. It is not a secret that wartime is one of the most destructive periods to both humankind and the natural environment. As previously noted, even the most advanced and civilized of societies have collapsed from environmental damage and hostile neighbors. In the midst of existing threats such as environmental modification techniques, biological and chemical agents, depleted uranium, nuclear weapons, and more, it seems pertinent to undertake a critical assessment of IHL and test its *adequacy* to protect the *natural* environment in wartime. If it is not being adequately

⁵ *Convention (IV) Respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*. The Hague, 18 October 1907

⁶ *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. Saint Petersburg, 29 November / 11 December 1868. (emphasis mine)

⁷ See Sun Tzu translated by Thomas Cleary (1988:1): *The Art of War*. Boston: Shambhala Publication, Inc.

protected, what are the notable weaknesses in the legal framework and how might it be strengthened?

Clearly, the *natural* environment is an indispensable constituent of sustainable development. If the aim of sustainable development is to remain a realistic target for the international community of states – then perhaps, these aspects which threaten to *destroy* it and *protect* it should be considered. As Steve Turner states:

Time has shown that the principles of sustainable development alone will not be sufficient to protect the environment and that the right to a good environment must be recognized on an international level with the appropriate legal mechanisms and regulations which govern decision making daily.⁸

1.1 Objectives

The thesis herein contains several objectives. Its overall aim is to attempt a critical assessment of international humanitarian law (IHL) and examine its legal adequacy in the protection of the *natural* environment in an armed conflict context. Additionally, some vital links between international humanitarian law and sustainable development (SD) will be underscored.

The first objective is to set the background by demonstrating the global importance to protect the natural environment in order to achieve SD. Next, an attempt is made to uncover the present meaning and interpretation for what a *natural* environment actually *is* in order to better understand *how* it is currently being identified and protected in an armed conflict – or not.

The second objective is to undertake a collective case study. Notorious for their striking impact on the *natural* environment, the three cases selected are: Vietnam War, Gulf War, and Kosovo Conflict. Throughout the entire assessment, a particular emphasis will be placed upon conflicting parties, methods and means of warfare, environmental damage, applicable laws, legal interpretations,

⁸ Turner, Steve. (2004) “*The Human Right to a Good Environment. The sword in the stone. Non-State Actors and International Law.*” 4:277-301

criminal responsibility and some prospective threats to sustainable development. Moreover, the overarching goal will be to establish the factual basis in order to demonstrate how the natural environment is or perhaps, is not being respected and protected under IHL.

The third objective is to provide a critical assessment of international humanitarian law regarding the protection of the natural environment. In this section, the purpose is to demonstrate important functions of this particular body of international law and its relevance toward the attainment of SD. Another objective is to draw attention to the chronological development of international law based upon post-factum revelations and highlight how historically it has taken a piecemeal approach toward advancing protection, as required.

Toward this aim, an assessment of the most important legal sources shall be presented. Within the analysis, both *direct* and *indirect* methods of protection will be reviewed and discussed. IHL principles are also emphasized in order to address their distinctive function within the legal framework. Additional texts relative to the study and customary international law (CIL) will also be examined, weighed and presented.

The central research question is:

Does international humanitarian law *adequately* protect the *natural* environment in the event of an armed conflict?

Following IHLs critical assessment, a sub-question is:

Are there notable *weaknesses* within the current legal framework of IHL which may be strengthened to enhance the protection of the *natural* environment in the event of an armed conflict?

The fourth objective is to pinpoint some of the notable weaknesses regarding protection of the *natural* environment. And then, the fifth objective is to present some practical suggestions in an attempt to strengthen protection of the natural

environment during hostilities and ultimately, enhance the security of this vital component toward the attainment of sustainable development.

In conclusion, some of the most relevant findings shall be highlighted in relation to a few vital links between international humanitarian law and sustainable development. The added consideration of *development* of special protection for the natural environment shall be further discussed in an attempt to rethink a more comprehensive approach toward the framework of IHL in order to maintain the legitimacy of one of its primary functions – the prevention of unnecessary suffering. Important elements of the natural environment's formal consideration during wartime will be expanded upon as present deliberations are forewarned to not overlook its vital role in the quest for sustainable development. Ultimately, a main objective of the conclusion is to underscore that further *limitations* upon the destruction of the natural environment are deemed necessary in order to establish a more meaningful basis for sustainable development, and overall, a more realistic foundation to establish international peace and security by enhancing international relations through the shared protection of the natural world.

1.2 Methodology

The interdisciplinary research herein consists of a mixed methodological approach. The first portion of the research involves a discourse, literature and journal analysis in relation to sustainable development (SD). As an indispensable constituent, a deeper understanding of the role and relevance toward the protection of the natural environment in an armed conflict and post-conflict context shall be sought-after. Through an enhanced understanding of current environmental interests, threats and challenges in the course of international relations during peacetime, the above methodological approach aims to strengthen the philosophical and practical underpinnings in order to attend to the environmental consequences in wartime.

To widen the scope of ecological considerations, a brief analysis of international environmental law shall be constructed. A number of landmark environmental movements, such as, the Stockholm Declaration, Rio Declaration, Agenda 21, Convention on Biological Diversity (CBD), United Nations Framework Convention on Climate Change (UNFCCC), Montreal Protocol, and more shall be studied in order to develop an enhanced sensitivity toward the protective interests of the international community of states.

The next portion of the study involves a critical assessment of international humanitarian law (IHL). Varied methods will be utilized, such as narrative and textual analysis, media studies and participant observation within IHL forums and online seminars. As the official guardian of international humanitarian law, the ICRC shall provide an appropriate institutional study as various reports and internet sources publicly announce the relationship between international humanitarian law and sustainable development. These diverse sources will be studied to ascertain the current stance regarding environmental protection in wartime.

The research is also supplemented by a two year voluntary involvement with the Oslo Red Cross organization and an advanced study by participation in the IHL 27th Edition Course in Warsaw, Poland. Through a combination of academic lectures and practical exercises the foundational basis for this study shall be enhanced. Potential interviews shall be ascertained through this academic and professional association, if necessary and permitted.

To reflect upon the application and adherence to IHL, a collective case study shall be undertaken. The Vietnam War, Gulf War, and Kosovo Conflict have all been selected as relevant cases to review the legal adequacy of protection for the natural environment in wartime. Particular elements of each case such as the legal timeline, conflicting parties, methods and means, environmental damage, applicable rules, legal interpretation and criminal responsibility will all be examined in order to draw a reasonable conclusion. To support this component

of the research, literature analysis, academic journal analysis, institutional report analysis, media studies, and narrative analysis shall be these methods selected.

1.3 Theoretical Approach

The theoretical approach is a merger of international relations and development theory. Throughout the thesis an attention is placed upon what is commonly depicted as *developed* nations in association with *lesser developed countries* (LDC). With critical thought pertaining to conflicting parties, warfare methods and means, and political and military actions deployed which adversely impact the social, economic, political and/or cultural dimensions in the course of domestic and international relations, such reflections shall provide inputs for the theoretical foundation. Intrigued by the post-modernist and neo-modernist position, there is a temptation to consider the emergent neo-modernist position and states of dependency theory which seem to frame the possible notion of new forms of imperialism by the Western world.

For some states and particular sects of society, the process of *development* or sense of *change* can bring about violent conflict and instability. Although highly arguable, warfare is sometimes considered as a tool of development to bring about a renewed state of peace. Modernization is often viewed as a departure from traditional ways of living, as materialistic and economic gain becomes an important focus toward a new way of life. The thrust of capitalism and industrialization by foreign multi-national companies into the LDC has been known to serve as a double-edged sword. As the traditional development approach with its core focus on solely the economic dimension of human existence has been generally perceived as deficient in meaning or spiritual essence of human livelihoods. Theoretically, dependent on the conflicting parties or actors involved and the source of intentionality fueling the conflict at hand, there could arise an analytical sphere to illuminate the type of development being sought-after, for example, the process of democratization, the lust for ideological

domination or the inequalities of various forms of ethnic division. In view of the development process, whether *immanent* or *intentional*, it seems that much insight could be gained from the battlefield and from the stark realities or even illusions of human motivation. Within this identity of the military significant states coupled with advanced weaponry of the military industrial complex, the notion of dependency theory strikes an interesting cord for theoretical analysis.

Environments of war are abruptly crippled and *dependent* on numerous levels. Within a split-second, the physical, psychological, social, political, economical, and spiritual dimensions which ultimately sustain human livelihoods and wellbeing could become shattered. The total destruction of important physical infrastructures and also aspects of the natural environment which provide sustenance to the welfare of the state can leave its human population and its surroundings in a state of dependency imposed upon by powerful military states. Yet, dependent on the circumstances ruling at the time, the use of such potent military force will be considered either lawful or unlawful.

From this position, LDC could have a weaker position on the battlefield as military significant states or allied forces utilize war as an instrument under the guise of *development*. In reality, it is the environmental consequences of wartime that plunge lesser developed countries into a state of underdevelopment, leaving them totally dependent upon the aid of the wealthier nation-states. Through these political and tactical maneuvers of severe destruction, it is tempting to consider insights from postcolonial and postmodern lessons-learned. Is it a possibility that particular actors inflicting severe forms of destruction upon other nations can be viewed as new forms of imperialism though imposing conditions of dependency?

Following the clutch of foreign domination, the process of decolonization and the human battle toward independence, could the *widespread, long-term* and *severe* destruction of the natural environment in wartime be used tactically to create new pathways to political power? Could this vital link between humanity and its clear

dependency on *natural* resources reveal another development concern between the West against the Rest? For example, as it may be perceived through the political and military alliance of the North Atlantic Treaty Organization (NATO). Based on these lines of thought, the rationale for the theoretical merger between international relations and development theory is being considered.

Furthermore, allegations concerning the greed for oil, the lust for economic gain, the gluttony for land and superpower, the humanitarian need for compassion, equality and freedom, in addition to the invocation of the *jihad* seem to be telling a story about the ills and cures of neo-modernist development position. It is also interesting to reflect upon from an international relation and development viewpoint how the blind wrath of military aggression might threaten the international hope for a viable solution for sustainable development.

It is indisputable that the *natural environment* has become a bargaining chip on the international relations table. Its role has been demonstrated repeatedly within the Kyoto Protocol, CBD, UNFCCC, and Additional Protocols to the Geneva Conventions, Rome Statue, as well as other various forms of disarmament law and eco-friendly movements. These particular developments have continuously sought-after legal mechanisms to better regulate *protection* for the natural environment under international law.

Some lesser developed countries and other states have repeatedly taken a more liberalist position toward protection of the natural environment by demonstrating a willingness to make political and national sacrifices in a spirit of international co-operation toward global environmental security, as encouraged by the United Nations and well-documented in the Brundtland Commission Report (BCR). On the other hand, some states have repeatedly demonstrated a realist position through an unwillingness to make national or political sacrifices, as it might hinder a perceived 'way of life' and perhaps threaten the cultural, social and/or economic sources of political interest. Throughout the thesis, it is my interest to

consider these various theoretical crossroads and present some related thoughts with respect to matters of international relations and development theory.

1.4 Thesis Organization

The overall thesis is organized into six chapters. Each chapter addresses a variety of concerns regarding the significance of protection for the *natural* environment during hostilities. Throughout the research, the legal adequacy of IHL to provide the necessary legal mechanisms to regulate wartime environmental destruction will be critically assessed, while also bearing in mind the international development aim toward sustainable development.

Chapter 2 provides some reflections on various intentions behind the sustainable development aim through its driving forces: Stockholm Declaration, Brundtland Commission Report, Rio Declaration, Agenda 21 as well as other environmental movements and institutions. Some of the sustainable development and environmental matters of custom shall be evaluated, such as, the human right to a good environment and the principles of *precaution*, *prevention from harm* and *intergenerational ethics*. In view of the importance of the *natural* environment toward sustainable development, the concept will be reassessed and its formal definition explored.

Chapter 3 provides a collective case study regarding some of the most prominent environmental consequences of wartime. There are three cases studied: the Vietnam War, Gulf War and Kosovo Conflict. Within each case selected a keen attention shall be directed to the parties to the conflict, methods and means of warfare, the extent of environmental damage, the legal regime applicable, legal interpretations and the overall adherence to international humanitarian law and matters of criminal responsibility. The chapter is designed to ascertain if international humanitarian law is presently considered *adequate* or *inadequate* in the protection of the *natural* environment in wartime. Additionally, attention is

placed toward prospective threats of sustainable development with reference to *widespread, long-term* and *severe* damage caused from particular military activities.

Chapter 4 presents the historical origin, general purpose and principles of IHL. The legal principles in wartime such as *military necessity, distinction, proportionality* and *humanity* will be studied and discussed. Additionally, the main legal sources of protection in wartime whether through *indirect* or *direct* means, will also be studied and discussed. Some thoughts concerning the overall legal framework upheld by the rules of the Geneva Conventions and its Protocols Additional, Customary International Law (CIL), the ENMOD Convention, and the Rome Statute of the International Criminal Court (ICC) will also be briefly touched upon within this chapter.

Chapter 5 provides some notable weaknesses discovered in the legal framework. Some concerns in relation to the characterization of the conflict, ambiguities within the law and an apparent absence of key elements in order to establish a meaningful framework to protect the *natural* environment in an armed conflict shall be highlighted. Accordingly, some practical suggestions toward enhancing the protection for the natural environment will be presented for additional research and consideration.

Chapter 6 provides the conclusion with reference to the overall *adequacy* of protection for the *natural* environment in wartime. The realism of diverse forms of transboundary harm caused by military activities alongside the need to protect global interlocking interests of environmental security shall be elevated in an attempt to highlight a moral and legal imperative to advance the framework of IHL, *if* sustainable development should ever become realized. As Sun Tzu once highlighted within the Art of War:

The military provides protection, which is crucial to every form of life. Protection means respecting one's integrity, or wholeness, through either warding off or

extending outward – through defending or conquering. This may entail conflict. Regardless of whether we find this pleasant, we must look into it.⁹

⁹ The Denma Translation Group (2003: Commentary from Chapter 1): *The Art of War Book and Card Deck*. China: Shambhala Publications

2. The Search for Protection of the Natural Environment

2.1 A Global Movement for Environmental Protection and Sustainable Development

The obligation to care for the *natural* environment can be traced back to the 1972 Stockholm Declaration. Since this point, environmental awareness has been on the rise alongside a host of rightful reasons to protect it. With a common interest set in motion, international initiatives and eco-friendly state practices began to set the precedent for a more principled relationship with nature. The global shift from an anthropocentric to a more biocentric viewpoint was a clear indication that *limitations* must be placed upon a system of finite natural resources. Heeding the call of the natural world, a new foundation for environmental and customary law was formed. For decades now, it is normally agreed that the *natural* environment is a special object of *care*.

Seeing that the natural environment is a fundamental pillar of sustainable development, its protection from harm and irreversible damage is a vital concern – that is, *if* the notion of SD should ever be realized. And although the human person is well-noted as its central concern, it is certainly *not* the only concern to achieve sustainable development as a whole.

Despite wide-ranging anthropocentric and biocentric viewpoints amid the development discourse, it seems a holistic attitude reinforced by meaningful action is increasingly vital. As it stands now, the principles of *precaution* and *intergenerational ethics* are standard considerations toward the attainment of SD. In view of the fact that humanity and the natural environment are vitally linked, it seems that the legal obligations associated with the duty to *protect* and *care* for this interlocked system are essential. For one matter is certain. Planet Earth's

natural resources and forces will *not* respect man-made jurisdictional borders. In the greater scheme of life, every nation is fundamentally dependent upon the welfare of the other. As Our Common Future states:

There are...no military solutions to 'environmental insecurity.' And modern warfare can itself create major internationally shared environmental hazards. The idea of national sovereignty has been modified by the fact of interdependence in the realm of economics, environment, and security. The global commons cannot be managed from any national center: the nation state is insufficient to deal with threats to shared ecosystems. Threats to environmental security can only be dealt with by joint management and multilateral procedures and mechanisms.¹⁰

To envisage the worth of something, it has been said that one should consider its absence. What might one envisage without clean drinking water, fresh air or fertile landscapes which provide sustenance to all sentient beings? From another view, what might one envisage about the sudden loss of food or safety, the chronic fear of violence, or perhaps the void of *care* for life itself? These are pressing concerns at the heart of international *development* today.

Yet environmental problems are still mounting worldwide. Noting the fact, it was deemed sensible to construct a new basis for human activities in collaboration with nature. Twenty-six principles set the initial framework for how states ought to behave with respect to their international relations “from activities conducted in all spheres.”¹¹ Toward its effective implementation, states have been asked to “co-operate through multilateral or bilateral arrangements or other appropriate means essential to *control, prevent, reduce and eliminate* adverse environmental effects.”¹²

It was the Stockholm Declaration's principled force which prompted the development of various institutional capacities to steer its *green* agenda accepted then by 103 nations. Within a short period, ecological initiatives led to the

¹⁰ World Commission on Environment and Development (WCED 1987:301): *Our Common Future*. Oxford: Oxford University Press.

¹¹ United Nations Conference on the Human Environment (UNCHE, 1992): *Stockholm Declaration*. Principle 24

¹² United Nations Conference on the Human Environment (UNCHE, 1992): *Stockholm Declaration*. Principle 24 (emphasis mine)

advancement of a collective expertise and mechanisms to secure the *natural* environment via the United Nations Environment Programme (UNEP), World Charter for Nature, World Commission on Sustainable Development (WCSD), United Nations Conference on Environment and Development (UNCED), Convention on Biodiversity (CBD), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Earth Charter, Aarhus Convention and other eco-movements inspired through the commendable leadership preserved within *Our Common Future*.

Within *Our Common Future*, also known as the Brundtland Commission Report (BCR), an important element was at once illuminated to guide the realm of international relations. For respecting state responsibility, it was not only domestic matters concerning the *natural* environment that became a mounting concern, but also transboundary considerations between states were now on the horizon.

The BCR depicted particular *activities* which could trigger natural resource depletion, ecological stress, economic and social degradation, hazardous pollution, toxic waste discharge, space debris, biodiversity and genetic diversity loss, and other threatening conditions. Additionally, the report forewarned that *military activities* were a prime threat toward the demise of sustainable development. In order to protect the global environment from potential harm a clear direction was provided to enact well-enforced laws and strict liability legislation *controlling* harmful side effects.¹³

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control *do not cause damage to the environment* of other States or of areas beyond the limits of national jurisdiction.¹⁴

¹³ World Commission on Environment and Development (WCED, 1987:47): *Our Common Future*. Oxford: Oxford University Press. (emphasis mine)

¹⁴ United Nations Conference on the Human Environment (UNCHE, 1972): *Stockholm Declaration*, Principle 21. (emphasis mine)

Yet still, an unsettling grey zone persists. Amid rapid scientific and technological advancements, the industrialized age continues to make available transformational powers. Ever more elusive, some of these transformational threats to the *natural* environment are camouflaged as serving a “*dual-use*” purpose, for example, biotechnology, chemical production, nuclear capabilities, and more. These particular areas remain of special interest concerning global environmental security.

Despite persistent warnings, human civilization still stands accused of producing unsafe levels of pollution in the air, water, earth and even within other living organisms.¹⁵ Not only is the biosphere starting to suffer ecological disturbance and climatic change, but also the depletion, degradation and destruction of finite natural resources are imposing a *widespread, long-term* and *severe* threat to the “physical, mental and social health of man.”¹⁶ Realizing the need for *limitations* and *liability* with respect to environmental damage, the Earth Summit established Principle 13 which affirms:

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.¹⁷

Upon noticing the *vital link* between humanity and the *natural* environment – the ‘right to a healthy environment’ began to emerge as an international norm. This seems a logical development as the right to *life, security of person*, and *liberty* are inalienable human rights protected by the rule of law.¹⁸ Furthermore, it is every person in the world that has the right to a standard of living adequate for health

¹⁵ United Nations Conference on the Human Environment (UNCHE, 1972): *Stockholm Declaration*

¹⁶ United Nations Conference on the Human Environment (UNCHE 1972): *Stockholm Declaration*

¹⁷ United Nations Conference on Environment and Development (UNCED 1992): *Rio Declaration*. Principle 13. Earth Summit Rio de Janeiro. 19th plenary meeting.

¹⁸ United Nations (1948): “*The Universal Declaration of Human Rights*.” Article 3 [online]. <http://www.un.org/en/documents/udhr/index.shtml>, (retrieved 8 May 2010).

and wellbeing, which includes the basic necessity of food.¹⁹ In order to uphold these fundamental human rights, it would prove difficult to meet these conditions without the protection of the *natural* environment.

In 1986, the United Nations General Assembly (UNGA) also declared the right to *development* an inalienable human right.²⁰ Six years later, the Rio Declaration connected these two elements as it states that “the right to development must be fulfilled so as to equitably meet the *developmental* and *environmental* needs for the present and future generation.”²¹ And presently, over 60 state constitutions contain specific provisions to protect the *natural* environment²² establishing the right of every person to a safe and healthy environment. Bizkaia Declaration also adds that everyone has the right, individually or in association with others, to enjoy a healthy and ecologically balanced environment... which may be exercised before public bodies and private entities, whatever their legal status under national or international law. To enhance the protection for the natural environment, all states are asked to include protective measures in both law and practice on sub-national, national, regional and international levels.

But is a stone unturned? Even if states adequately protect their natural environment in peacetime, the life of a state is split in two. Generally, it is agreed that in peacetime the protection of the natural environment is emerging as a customary state practice. States do not seem to tolerate environmental degradation at the expense of another state. In reality, the “*no harm*” principle holds a firm position in environmental law and the polluter pays principle (PPP) is often recognized with escalating moral and legal considerations toward the future generations.

¹⁹ United Nations (1948): “*The Universal Declaration of Human Rights*.” Article 25 [online]. <http://www.un.org/en/documents/udhr/index.shtml> (retrieved 8 May 2010).

²⁰ *Declaration on the Right to Development* (1986): Adopted by General Assembly resolution 41/128 of 4 December

²¹ United Nations Conference on Environment and Development (UNCED 1992): *Rio Declaration*. Principle 3. Earth Summit: Rio de Janeiro. 19th plenary meeting.

²² Giorgetta, Sueli. (2002:181): “*The Right to a Healthy Environment, Human Rights and Sustainable Development. International Environmental Agreements*.” Politics, Law and Economics 2. Netherlands: Kluwer Academic Publishers.

In support of such aims, several instruments are encouraged in peacetime as *precautionary* measures to prevent or reduce environmental harm. Some instruments are environmental impact assessments (EIA), intrastate and interstate notifications, consultations and negotiations. On the other hand, however, how is the *natural* environment adequately protected in *wartime*?

Karen Hulme claims that the protection of the natural environment during wartime under environmental law is unclear and that any damages must be examined on a case-by-case basis.²³ Eric Jensen adds that although there are more than 900 treaties which provide legal provisions dealing with environmental protection, “none attempt to create an integrated approach to environmental warfare regulation.”²⁴

Irrefutably, environments of war pose a serious threat to human beings and the natural environment. Therefore, it seems reasonable to suggest that in order to construct a reliable framework toward the attainment of sustainable development – one must scrutinize whatever might *destroy* it or stand in the way to *protect* it. Bauman believed that the notion of “creation and destruction are inseparable aspects of every civilization.”²⁵ However, civilization in this day and age is often expected to be in accordance with international law, even in wartime.

Overall, if *limitations* upon the destruction of the *natural* environment are not clearly recognized, respected and enforced in both peacetime and wartime, then conceivably, it might be time to reconsider the notion of SD. For according to its harshest critics, it simply might not have the necessary means in order to ever be realized. Decades ago, it was Freud’s conviction:

We have given the answer already by pointing to the three sources from which our suffering comes: the superior power of nature, the feebleness of our own bodies and

²³ Harvard Online (2010): “*The Protection of the Environment in the event of armed conflict: Military or civilian Asset.*” 15 July.

²⁴ Jensen, Eric T. (2005:155): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict.*” Vanderbilt Journal of Transnational Law. Vol.38:145.

²⁵ Schech, S. and Haggis, J. (2000:58): “*Culture and Development. A Critical Introduction.*” Blackwell Publishing.

the *inadequacy* of the regulations which adjust the mutual relationships of human beings in the family, the state and society.²⁶

2.2 The Natural Environment in Wartime

The United Nations Conference on the Human Environment (UNCHE)²⁷ initiated a common vision to strengthen environmental protection for the international community as a whole. However, its widespread categories which aim to identify the environment seem to give the impression that it incorporates just about everything. In order to truly ascertain protection for the *natural* environment in wartime, it seems the first challenge is to define the term “*environment*.”

Stockholm Declaration seems to reinforce this point as it highlights an identification of the human environment, natural environment, living environment, working environment, earthly environment, and world environment.²⁸ Inside these all-inclusive packages of environmental concern, it seems that the notion of an environment is rendered indistinctive, and therefore, the ability to protect it during hostilities presents a rather curious task. Nevertheless, some distinctions may be deduced.

Narrowing focus, international humanitarian law pinpoints two types of environment. The first environment is called the *man-made*. In the event of an armed conflict, the man-made environment has particular aspects which receive explicit mention and protection under the shield international law.

Additionally, IHL offers combatants a means for the identification of these particular man-made aspects or objects to be respected and protected during hostilities. Enshrined in the main legal texts of the *Geneva Conventions of August*

²⁶ Freud, Sigmund. (1961:37): *Civilization and its Discontents*. New York and London: W.W. Norton & Company. (emphasis mine)

²⁷ United Nations Conference on the Human Environment (1972): *Stockholm Declaration*

12 1949 (GC) and its *Additional Protocols of 1977*(AP), the following are provided a special protection status and are thus, identified in wartime through the use of a distinctive emblem, for instance: hospitals, schools, places of worship, museums, cultural objects, works of art, public-service buildings, dams and dykes, nuclear power plants and other related infrastructures.²⁹ Without a shred of doubt, there are aspects of the *man-made* environment which are clearly being identified as an area of protective concern.

In addition, there are some operational channels within the man-made environment that are also to be respected and protected. Special objects and related personnel of this special protection that are being identified to assist these humanitarian operations are: medical equipment, medical supplies and personnel, religious or spiritual personnel, journalist, transportation vehicles and more. Although these tangible and intangible considerations are *vital links* toward the overall attainment of sustainable development, the main interest herein is the *natural* environment in wartime. Is it *adequately* protected?

In short, the natural environment is given some mention within IHL; however, the protection it receives is pale by comparison with the man-made environment. Point in fact; the Geneva Convention never mentions the term *natural environment* – not even once. With its universal influence, these four treaties comprising over 400 legal provisions could extend some protection to the natural environment in wartime; however, its protection is merely *indirect*. Methods of indirect protection implies that it does not explicitly mention that the natural environment must be protected, however, through other forms of protection, the natural environment may still be spared from harm.

The *direct* protection and hence, explicit mention for the protection of the *natural* environment in wartime began in 1977. Within *Additional Protocol I*

²⁸ United Nations Conference on the Human Environment (1972): *Stockholm Declaration*

²⁹ *The Geneva Conventions of August 12 1949 and its Additional Protocols 1977*

(API), there are 102 legal provisions and two of these are being dedicated toward protection of the natural environment. Although these two provisions are limited in scope and often disregarded as vague, the main point is that the *natural environment* is now formally identified as an object of special consideration in an armed conflict.

The formal inclusion of protection for the natural environment is an important development in IHL for the reason that primarily the law of war has been designed to protect the human person from unnecessary suffering. Clearly there is vital link between humanity and the natural environment being recognized on the battlefield. It is puzzling though to see, what the *natural environment* is. What particular aspects of the natural environment are being officially protected under international law? How might combatants and military command identify and protect the natural environment to make rational targeting decisions and to act in accordance with IHL rules and principles? These questions will be further expanded upon throughout the thesis.

The question “what is the *natural* environment?” was presented to a panel of environmental and legal experts. In response, Hulme claims that there is nothing within the interpretation of environmental law that defines what an environment actually ‘is’, and therefore – there is *no* formal working definition.³⁰ In addition, she claims that the concept of the natural environment is not really a strong consideration for either military command or IHL lawyers. As some concern amid the forum brewed, another issue to address became “how military command might recognize natural environments in need of *special protection*? The reply, historically, military command does not generally consider the environment.³¹

³⁰ Hulme, Karen. (2010): “*The Protection of the Environment in the event of armed conflict: Military or Civilian Asset.*” Harvard Online Seminar. 15 July.

³¹ Hulme, Karen. (2010): “*The Protection of the Environment in the event of armed conflict: Military or Civilian Asset.*” Harvard Online Seminar. 15 July.

Without a clear and common understanding defining what the natural environment *is*, an argument was presented that this vagueness could lead to interpretative disagreements over what qualifies an environment³² and as such, ultimately, the law might fail in its protective aim. Hulme adds, “I don't think military commanders really sit down and worry about the definition of the environment. If it's got four legs and is running around, it's the environment.”³³

Upon the noticeable lack of a formal working definition it seems fair to propose that interpretative challenges may arise. Hence, this terminological vagueness could cast doubt with respect to environmental identification, targeting decisions, weaponry selection, and the overall application of the law. Such a degree of *uncertainty* leaves an important matter of concern as these perceptions and considerations are connected to a series of calculation decisions which determine the legal threshold of permissible harm inflicted upon the *natural* environment.

...the terminologies presently used to distinguish types of internal war vary greatly, are generally ambiguous, often define overlapping phenomena, or phenomena difficult to distinguish in practice, and rarely based on clearly discernible analytical needs. For few phenomena do social science, history, and conventional language offer so various and vague a vocabulary....³⁴

In light of mounting evidence which demonstrates severe environmental harm upon past and present battlefields, obstacles of vague language and its subsequent interpretative disagreements shall be examined in the upcoming collective case study. In an attempt to ‘square the environment’ we shall examine ways in which the *natural* environment has been directly targeted, deliberately manipulated and perhaps unnecessarily injured from declared *unintended* or *unforeseen* consequences.

³² Modirzadeh, Naz. (2010): “*The Protection of the Environment in the event of armed conflict: Military or Civilian Asset.*” Harvard Online Seminar. 15 July.

³³ Hulme, Karen. (2010): “*The Protection of the Environment in the event of armed conflict: Military or Civilian Asset.*” Harvard Online Seminar. 15 July.

³⁴ (Eckstein, repr. 1972:11) Schmidt, Alex P: *Thesaurus and Glossary of Early Warning and Conflict Prevention Terms* (Abridged Version). Sythesis Foundation. Erasmus University (May 1998) edited by Sanam B. Anderlini for FEWER

Alex Schmidt upholds that “to minimize this confusion and bring greater analytical clarity it is important to provide *distinct* definitions for terms.”³⁵ Echoing the point, Hobbes believes that “to construct a science we must choose our *definitions* aptly.”

The first use of names is to serve for *marks*, or *notes* of remembrance. Another is when many use the same words to signify (by their connexion and order) one to another, what they conceive or think of each matter, and also what they desire, fear, or have any other passion for. Secondly is to show to others that knowledge which we have attained, which is to counsel and teach one another. Thirdly, to make known to others our wills and purposes, that we may have the mutual help of one another.³⁶

In an attempt to establish this note of remembrance, Jensen claims that a vivid *definition* of the environment is found within the United Nations *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques 1976*, otherwise known as the ENMOD Convention. ENMOD defines the environment as: “the Earth, including its biota, lithosphere, hydrosphere and atmosphere or . . . outer space.”³⁷ Seemingly an impractical match, Jensen believes that this definition lacks clarity which makes it difficult to provide *adequate* protection.

Another scholar defines the environment as “anything that is not *man-made*.”³⁸ He argues that “the only reason for defining the environment and environmental damage more explicitly would be an attempt to place an absolute *limitation* on environmental damage which cannot be exceeded by a military commander.”³⁹ Although he upholds that strict limitations are unnecessary, in contrast, it should be a red flag signaling that a formal working definition is a *vital link* in the protection of the *natural* environment in wartime, and therefore, a significant concern toward the attainment of sustainable development.

³⁵ Schmidt, Alex P. *Thesaurus and Glossary of Early Warning and Conflict Prevention Terms* (Abridged Version). Sythesis Foundation. Erasmus University (May 1998) edited by Sanam B. Anderlini for FEWER. (emphasis mine)

³⁶ Hobbes, Thomas (1994:16-17): *Leviathan*, with selected variants from the Latin edition of 1668. Edited with Introduction by Edwin Curley. Canada: Hackett Publishing Company, Inc. (emphasis mine)

³⁷ Jensen, Eric T. (2005:150): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145

³⁸ Jensen, Eric T. (2005:150): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145 (emphasis mine)

With more digging for terminological support, a seemingly practical definition for the *natural environment* has been unearthed. Within *The Dictionary of the International Law of Armed Conflict*, published in 1984, I discovered a definition of the natural environment purposely designed to be applied in an armed conflict context. Distinguished military commander, General Pietro Verri considered “admirably qualified to write such a work”⁴⁰ defined the *natural environment* as:

The *physical, chemical, and biological* conditions that make possible and propitious to the life of living creatures. It is prohibited to use methods and means of warfare which are intended or may be expected to cause widespread, long-term and severe damage to the natural environment and thereby to prejudice the health or survival of the population. Attacks against the natural environment by way of reprisals are also prohibited. (MB. 1982 Part XII, Art. 225; UN 1976; PI Arts. 35, 55; UN 1982 Art. 20)⁴¹

In black and white, plainly published by the International Committee of the Red Cross, Red Crescent and Red Crystal (ICRC), the official custodian of international humanitarian law (IHL), might the above-mentioned become the formal working definition once suspected missing? To improve protection for the *natural environment* could these *physical, chemical, and biological* elements provide a means for the practical assessment of environmental damage and therefore, set forth specific variables to properly calculate and define the threshold of permissible harm?

It seems pertinent that the notion of terminological precision with respect to the natural environment is in need of further research and discussion. Although it is presently argued that the definitional imprecision may serve to provide broader coverage of environmental protection,⁴² evidence based on the collective case study herein seems to demonstrate otherwise.

³⁹ Jensen, Eric T. (2005:150): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145

⁴⁰ Verri, Pietro.(1992:5): *ICRC Dictionary of the International Law of Armed Conflict*. Geneva, Switzerland: ICRC.

⁴¹ Verri, Pietro.(1992:46): *ICRC Dictionary of the International Law of Armed Conflict*. Geneva, Switzerland: ICRC.

⁴² Jensen, Eric T. (2005): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145

The protection of the *natural* environment in wartime is plagued with ambiguity for various reasons. Clarification and consensus toward a formally acknowledged working definition seems to be a vital link in order to enhance its protection. Furthermore, unlike its *man-made* counterpart which is provided with a means of clear identification and protection through the use of special statuses and distinctive emblems, the *natural* environment does *not* have a comparable “road map” for neither its identification nor protection in wartime. Nevertheless, even if *explicit* wording of such a rule may be relatively straightforward its practical consequences may be greatly disputed by negotiating parties.⁴³ In the event a dispute should arise, *Our Common Future* advises nations to reconsider:

Many of the environment and development problems that confront us have their roots in this sectoral fragmentation of responsibility. Sustainable development requires that such fragmentation be overcome.⁴⁴

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They must seek security through co-operation, agreements, and mutual restraint; they must seek common security. Hence interdependence, which is so fundamental in the realm of environment and economics, is a fact also in the sphere of arms competition and military security. Interdependence has become a compelling fact, forcing nations to reconcile their approach to “security”.⁴⁵

⁴³ SUM Program (2009:191): *Development studies compendium*. Oslo, Norway: University of Oslo.

⁴⁴ World Commission on Environment and Development (WCED 1987:63: *Our Common Future*. Oxford: Oxford University Press.(emphasis mine)

⁴⁵ World Commission on Environment and Development (WCED 1987:295): *Our Common Future*. Oxford: Oxford University Press.(emphasis mine)

3. Collective Case Study: War, Environmental Damage and Legal Considerations

3.1 The Vietnam War

Comparable to the crime of war known as genocide, which throughout history has deliberately taken the lives of millions of innocent men, women and children across divergent nations and ethnic backgrounds ostracized often as the *other*, it was the Vietnam War (1961-1975) which provoked a new crime called *ecocide*. Earning its sinister reputation, Jeffery McNeely describes ecocide as “destruction of the environment for military purposes.”⁴⁶ Similarly while also proposing an international agreement to ban widespread environmental destruction; Professor Arthur W. Galston defines ecocide as “willful destruction of the environment.”⁴⁷

Sometimes silently, the willful destruction of the environment can strike at the heart of a nation and its people through various means and methods. For instance, amid some totalitarian cultures the deadly link between ecocide and genocide has shocked the ecological conscience numerous times. From decades of assorted poisons used threatening the food chain as well as other forms of environmental abuse in Russia, to China’s nuclear dumping grounds as well as various knock-on effects from deforestation, starvation, and endangered species hunted in Tibet, the ecological balance is shifting and imposing fatal effects through inescapable webs of life.

The callousness of wartime tells a frightening story. Yet sometimes the brunt force of more pronounced battleground transcends silent whispers of affliction. For instance, the Vietnam War began as a superpower assisted military training

⁴⁶ McNeely, Jeffery A. (2000:362): *War and Biodiversity: An Assessment of Impacts. The Environmental Consequences of War. Legal Economic and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

⁴⁷ Nathalie de Pompignan, *Ecocide*, Online Encyclopedia of Mass Violence, [online], published on 3 November 2007, accessed 9 June 2011, URL : <http://www.massviolence.org/Ecocide>, ISSN 1961-9898

to the South Vietnamese which turned into a battlefield of fierce tactics, claims Hulme.⁴⁸ In attempts to outsmart and triumph over the Viet-Cong, it has been mentioned that the United States of America (US) used questionable *methods* and *means* to achieve its military plan in political opposition to communism.⁴⁹ It was ideological postures and military activities which caused environmental damage that until now plague the land and civilian population, nearly four decades later. Based on the testimony from some civilians and combatants – the war has never ended.

It is impossible to emphasize in great detail the widespread concerns from the environmental destruction. Yet it strikes a sensible chord that if the *natural* environment was not protected by the most destructive military activities under international law, then likely damage of a lesser degree might receive a similar fate. Thus, it is the most striking matters of environmental destruction that shall be analyzed herein, without losing sight of the contemporary aspirations for sustainable development. Primarily, the use of chemical herbicides, napalm and environmental modification techniques (EMT) are setting off the loudest alarm.

Besides eight million tons of bombs dropped on Vietnam, US armed forces ruined nearly 20,000km² forests and cultivatable land with chemical herbicides. Virtually 77,000,000 liters of dioxin-containing defoliants known as Agent Orange, Agent Blue and Agent White were sprayed on landscapes in order to kill vegetation and unveil camouflaged enemies.⁵⁰ According to epidemiologist Richard Clapp, dioxins are the worst toxins on the planet as he refers to them as the “Darth Vader of toxic chemicals.”⁵¹

⁴⁸ Hulme, Karen. (2004:4-5): *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

⁴⁹ Hulme, Karen. (2004:4-5): *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

⁵⁰ Nathalie de Pompignan, *Ecocide*, Online Encyclopedia of Mass Violence, [online], published on 3 November 2007, accessed 9 June 2011, URL : <http://www.massviolence.org/Ecocide>, ISSN 1961-9898

⁵¹ Earth Vison (2011): An earth Friendly Solution: [online] <http://earthvisionindustries.com/incineration.htm>, (retrieved 9 June 2011)

Albeit deadly chemical cocktails, the US Air Force launched a defoliation campaign using a dioxin containing substance code-named Agent Purple in South Vietnam. Yet researchers established that the most effective formulation was a 50/50 blend of 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T), later branded as Agent Orange.⁵² A Northern Vietnam soldier, Nguyen Van Quy recalls the caustic odor as it rained along the Ho Chi Minh trail, stating that the smell was a sign that Agent Orange had “*killed all life, down to the roots of plants that hungry soldiers ate*”.⁵³

Despite the claim that US military objectives were to *kill plants* and deny food and ground cover to the National Liberation Front, these particular methods and means ultimately challenged the notion of *widespread, long-term* and *severe* damage, and in due course, summoned states to rethink *limitations* on permissible destruction of the *natural* environment in wartime.

Stockholm International Peace Research Institute (SIPRI) calculated nearly 55 thousand tons of chemicals deployed in Vietnam, with approximately 86 percent of spraying missions directed against *forest* and other *woody vegetation*. The remaining 14 percent was directed against *crops*.⁵⁴ As intended, the food and camouflage was denied, but with longer-term considerations from the use of poisonous tactics other *disproportionate* and *indiscriminate* effects transpired. For it was these military activities which not only generated dead trees, stripped vegetations, contaminated waters, and polluted soils, but it was also their *side-effects* which maimed innocent civilians for *generations*. Hulme adds that the natural and human environments suffered *long-term* contamination, loss of forest habitat, and wildlife, *widespread* mutations, birth defects, cancers and death.⁵⁵ In

⁵² *Vietnam Association for Victims of Agent Orange vs. Dow Chemical Company ABC 50:Docket Number 05-1953-cv. Argued June 18, 2007-February 22, 2008* [online] <http://caselaw.findlaw.com/us-2nd-circuit/1177917.html>, (retrieved 27 September 2010)

⁵³ *Agent Orange, The Next Generation* [online] <http://www.ffrd.org/Lawsuit/NYTIMES.htm>, (retrieved 27 September 2010)

⁵⁴ Hulme, Karen. (2004:5) *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

⁵⁵ Hulme, Karen. (2004:5) *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

fact, scientists claim that there is no way of telling how many future generations may become affected by the genetic damage.

These military activities are viewed so *severe* that until now unimaginable deformities and *intergenerational* hardships remain. It was teratogenic and carcinogenic properties within the dioxin-blended contamination that indicate a potential linkage. In theory, it has been set forth as some evidence suggests that these poisonous chemicals bled into the *soil*, the *water* and then ultimately, the *food chain*. Subsequently, the *poisonous* foods passed from the mother to her developing fetus, causing genetic disorders within the next generation– and the next, and so on.

The magnitude of the trauma generated by the events that are affecting our world exact a toll on families, communities, and entire populations. Trauma can be self-perpetuating. Trauma begets trauma, and will continue to do so, eventually crossing generations in families, communities and countries until we take steps to contain its propagation.⁵⁶

It is estimated that approximately 500,000 children have been born with deformities since the 1960s. The exact number of those suffered is unknown. Third generation victims remain afflicted by the *widespread*, *long-term* and *severe* environmental impacts potentially causing cancer, miscarriages, ovarian tumors, prostate tumors, spina bifida, Down syndrome, Hodgkin disease, retardation and other grim physical deformations. Perhaps these deplorable outcomes reveal the justification as Rio Declaration Principle 24 affirms:

Warfare is inherently destructive of sustainable development. States shall therefore *respect* international law providing *protection for the environment* in times of armed conflict and *cooperate* in its further development, as necessary.⁵⁷

The respect for international law is expressed and upheld by states through treaty and customary law. However, it also involves an examination of the particular laws applicable at that time – it is not retroactive. Indeed the *widespread*, *long-*

⁵⁶ Levine, Peter (1977:9): Waking the tiger

⁵⁷ United Nations Conference on Environment and Development (UNCED 1992). *Rio Declaration*. Principle 24. Earth Summit Rio de Janeiro. 19th plenary meeting. (emphasis mine)

term and *severe* environmental damage caused during Vietnam isolated the *natural* environment as a separate legal theme going forward.⁵⁸ Be that as it may, during that period in wartime history as the environment was being deliberately targeted and manipulated— how was the *natural* environment being protected under international humanitarian law (IHL)?

Nature shall be secured against degradation caused by warfare or other hostile activities. The genetic viability on the earth shall not be compromised; the population levels of all life forms, wild and domesticated, must be at least sufficient for their survival, and to this end necessary habitats shall be safeguarded.⁵⁹

Since the Vietnam War led to the development of Protocols Additional to the Geneva Convention (AP), these supplementary legal provisions are not applicable in this case. Therefore, it is embedded within earlier treaty agreements, wartime legal principles, specific conventions and customary law that the search for environmental protection begins. In sync with the legal timeline, there a handful of rudimentary laws that may be invoked with respect to these aforesaid environmental harms. Yet, were these laws considered *adequate* to protect?

Predecessor to The Hague Conventions 1899 and 1907⁶⁰, the 1868 *St. Petersburg Declaration* set forth an international treaty agreement which established strict limitations on certain weapons. At that time through the support of 20 States Parties⁶¹ and nowadays as part of customary international law, the use of “arms, projectiles and *material* of a nature to cause unnecessary suffering”⁶² is clearly forbidden. The law states that “the only legitimate object which states should endeavor to accomplish during war is to weaken the military force of the enemy.”⁶³ It also expressly states that “the necessities of war ought to yield to the

⁵⁸ Austin, Jay E. and Bruch, Carl E. (2000:3) *The Environmental Consequences of War. Legal Economic and Scientific Perspectives*. United Kingdom: Cambridge University Press.

⁵⁹ The World Charter for Nature UN GA RES 37/7 (1982)

⁶⁰ Wikipedia: St.Petersburg Declaration.[online] http://en.wikipedia.org/wiki/St._Petersburg_Declaration_of_1868 , (retrieved 9 June 2011)

⁶¹ ICRC: International Treaties and Documents: [online] <http://www.icrc.org/ihl.nsf/INTRO/130?OpenDocument> ,(retrieved 9 June 2011)

⁶² *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. Saint Petersburg, 29 November / 11 December 1868.

⁶³ *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. Saint Petersburg, 29 November / 11 December 1868.

requirements of *humanity*”⁶⁴ and that “progress of civilization should have the effect of alleviating as much as possible the calamities of war.”⁶⁵ Although there is a balancing test that must be considered between the notion of military necessity and humanitarian concerns.

All the same, in the case of Vietnam the application and adherence of these customary rules are strikingly peculiar. Not only had the ancient taboo of *poison* slipped through cracks of criminal responsibility, but also *napalm* seemingly failed to be legally considered as a *material* of a nature to cause *unnecessary suffering*. Although the St. Petersburg Declaration renounces as a matter of custom the use of projectiles “either explosive or charged with *fulminating* or *inflammable* substances,”⁶⁶ the comparable use of an incendiary weapon composed of gasoline jelly,⁶⁷ otherwise known as *napalm* was extensively used by US armed forces. In fact, this vile fulminating concoction contains an igniting agent called white phosphorous which attaches itself to human skin blistering through muscle and bone rendering fifth-degree burns in numerous cases. Its use inflicts suffering to a degree claimed to be so painful and traumatic as to cause death. By comparison to the inhumane Explosive Projectiles Under 400 Grammes Weight⁶⁸ banned through the St. Petersburg Declaration, it is striking that chemical herbicides and napalm were not equally considered inhumane holding perpetrators accountable on both legal and moral grounds. In sum, the force of customary international law (CIL) was not *adequate* to protect the *natural* environment or humanity in this case.

Indeed, these *military activities* deeply concerned other states and motivated liberal developments in international law. Although post-factum, an official

⁶⁴ Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight. Saint Petersburg, 29 November / 11 December 1868.

⁶⁵ Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight. Saint Petersburg, 29 November / 11 December 1868.

⁶⁶ Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight. Saint Petersburg, 29 November / 11 December 1868.

⁶⁷ Hulme, Karen. (2004:5) *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

⁶⁸ Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight. Saint Petersburg, 29 November / 11 December 1868.

prohibition of incendiary weapons was later expressed in the *1980 Convention on the Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate Effects* (CCW).⁶⁹ CCW Protocol III is considered as advancement toward environmental protection in wartime as it prohibits and restricts the use of *incendiary* weapons on forests or other kinds of plant cover. One notable weakness, however, is that it has an exception clause whereas military necessity can legally override the humanity principle.

It is prohibited to make forests or other kinds of plant cover the object of attack by incendiary weapons except when such natural elements are used to cover, conceal, or camouflage combatants or other military objectives, or are themselves military objectives.⁷⁰

The Hague Convention and the Fourth Geneva Convention also offer applicable laws in the case of Vietnam. In the 1907 Hague Convention, in which the US ratified in 1909, Article 22 states:

The right of belligerents to adopt means of injuring the enemy is *not* unlimited.⁷¹ It especially forbids: to employ *poison* or poisoned weapons; to *kill* or *wound treacherously* individuals belonging to the hostile nation or army; to employ arms, projectiles, or *material* calculated to cause *unnecessary suffering*; to destroy or seize the enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war.⁷²

Adam Roberts claims that these provisions do have a bearing on the natural environment.⁷³ Although they were considered important in this case, oddly enough, it seems the concept of *poison* was not well-defined.⁷⁴ It was upheld that

⁶⁹ *1980 Convention on the Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate Effects* (CCW), Protocol III

⁷⁰ *1980 Convention on the Prohibitions or Restrictions on the Use of Certain Conventional Weapons which may be Deemed to be Excessively Injurious or to have Indiscriminate Effects* (CCW), Protocol III, Article 2.4

⁷¹ *Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*. The Hague, 18 October 1907, Section II, Article 22 (emphasis mine)

⁷² *Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*. The Hague, 18 October 1907, Section II, Article 23, (a,b,e,g) (emphasis mine)

⁷³ Roberts, Adam. (2002:52) *The Law of War and Environmental Damage. The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

⁷⁴ *Vietnam Association for Victims of Agent Orange vs. Dow Chemical Company ABC 50:Docket Number 05-1953-cv. Argued June 18,2007-February 22,2008* [online] <http://caselaw.findlaw.com/us-2nd-circuit/1177917.html>, (retrieved 27 September 2010)

the random poisoning of a large number of people, if it is a *side-effect* of the deforestation on the battlefield, is neither a crime against humanity, nor a violation of any treaty to which the U.S. was a signatory at the time the poisoning occurred.

Another problematic proposal was that Agent Orange should be classified as an herbicide, not as a *poison*.⁷⁵ This statement was found “unclear and hair-splitting...as Agent Orange contains *dioxin*, so if dioxin is a poison shouldn’t Agent Orange also be?”⁷⁶ Since the high dosage involved was sufficient to harm people, is it believable to expect that it would only harm *plants*? The military objective of targeting *plants* seemed an escape route for the defense, and thus, shielded under national sovereignty – it actually worked.

Up to now, none of the aforesaid treaties or customary rules was *adequate* to prevent or protect the natural environment from harm. Even the *Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare*, known as the 1925 Geneva Protocol (GP) which outlaws chemical substances, was deemed *inadequate* – regardless of the fact that it is claimed to prohibit such employment because of direct toxic effects on man, animals or *plants*.⁷⁷ Irrefutably, the blatant and extensive use of *poison* or more palatably articulated by the US “*herbicide* or *defoliant*” presents one of the most gripping tests of international law.

Although this legal interpretation with regard to the “direct toxic effects on... *plants*” was put forth in 1969,⁷⁸ several years following the US defoliation campaign, these particular military activities continued. Important to note, the GP was *not* applicable to the US armed forces, and as a matter of treaty law they

⁷⁵ A non-Lawyers Guide to Judge Weinstein’s Agent Orange Decision [online] <http://www.ffrd.org/Lawsuit/AO%20decision%20analysis.htm>, (retrieved 27 September 2010)

⁷⁶ A non-Lawyers Guide to Judge Weinstein’s Agent Orange Decision [online] <http://www.ffrd.org/Lawsuit/AO%20decision%20analysis.htm>, (retrieved 27 September 2010)

⁷⁷ Roberts, Adam. (2000:54) *The Law of War and Environmental Damage. The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

⁷⁸ United Nations General Assembly 2603A

were not obliged to comply with its terms. In fact, in 1961 Dean Rusk, Secretary of State, advised President Kennedy that “the use of *defoliant* does not violate any rule of international law concerning the conduct of chemical warfare and is an accepted tactic of war.”⁷⁹

According to Judge Jack B. Weinstein of the United States District Court ‘*even if*’ the US was a Geneva signatory during the Vietnam War, that the accord would *not* have barred the use of Agent Orange. He claims that “the prohibition extended only to gases deployed for their asphyxiating or toxic effects on *man*, not to *herbicides* designed to affect *plants* that may have *unintended* harmful side-effects on people.”⁸⁰

It was not until 1975, when President Ford issued Executive Order 11,850 that the use of herbicide was formally renounced “as a matter of national policy.” Ford’s accompanying remarks confirmed the consistent position of the US that “the 1925 Geneva Protocol does *not* cover chemical herbicides.”⁸¹ Is it possible that a reclassification and renaming of one of the most deadly poisons could have permitted its legitimate use? Dioxin was merely reduced to an ‘*herbicide* or *defoliant*’ in conjunction with the added justification that its *intended* use (or so-called intended use) was simply to kill plants. These statements imply that humanity and the natural environment are unrelated.

The problem is however that this is *not* how the *natural* environment functions. The natural environment is a *vital link* to human wellbeing – and in short, environmental harm may likely cause harm to humanity. Recognizing the potential danger of harmful substances, the Rio Declaration forewarns:

⁷⁹ *Vietnam Association for Victims of Agent Orange vs. Dow Chemical Company ABC 50:Docket Number 05-1953-cv. Argued June 18,2007-February 22,2008* [online] <http://caselaw.findlaw.com/us-2nd-circuit/1177917.html>, (retrieved 27 September 2010)

⁸⁰ *Agent Orange Case for Millions of Vietnamese is Dismissed*, [online] <http://www.nytimes.com/2005/03/10/nyregion/10cnd-oran.html> (retrieved 27 September 2010)

⁸¹ *Vietnam Association for Victims of Agent Orange vs. Dow Chemical Company ABC 50:Docket Number 05-1953-cv. Argued June 18,2007-February 22,2008* [online] <http://caselaw.findlaw.com/us-2nd-circuit/1177917.html>, (retrieved 27 September 2010)

States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any *activities* and *substances* that cause severe environmental degradation or are found to be harmful to human health.⁸²

Not only was a massive amount of fauna killed in Vietnam, but also an ecosystem collapse threatened several other species such as the Irrawaddy Dolphin, Saurus Crane, Asian Elephant, Giant Ibis, White Shouldered Ibis and deer species.⁸³ *Military activities* disturbed the underground water systems and soils through hazardous contamination which also endangered diverse living species – some which the *civilian* population relied upon as a food source. However, this food-chain interrelationship is not new evidence.

In 1926, J.L. Suarez, Rapporteur to the League of Nations Committee of Experts for the Progressive Codification of International Law wrote about *biological solidarity*, or what might be called the ecosystem approach to environmental protection.⁸⁴ Suarez had cautioned that “the loss of even a single species might have broader environmental effects so as to disturb the balance of the ecosystem itself.”⁸⁵ Referred to as the 'knock-on' effect theory it was pointed out that the loss of one species could trigger a series of negative consequences for the dependent species along the food chain. As this information is 85 years old, it should now be well considered toward the aim of meaningful protection.

It was not until 1966 when the discovery regarding *long-term* health effects of the pesticides including 2,4,5-T (known as the Bionetics Study) that the US government revealed evidence of teratogenicity (birth defects) in mice. Yet this information did not immediately *limit* its military use in Vietnam.⁸⁶ In fact, the last mission of the US defoliation program concluded in 1971, nearly five years

⁸² United Nations Conference on Environment and Development (UNCED 1992). *Rio Declaration*, Principle 14. Earth Summit Rio de Janeiro. 19th plenary meeting. (emphasis mine)

⁸³ Nathalie de Pompignan, *Ecocide*, Online Encyclopedia of Mass Violence, [online], published on 3 November 2007, accessed 10 June 2011, URL : <http://www.massviolence.org/Ecocide>, ISSN 1961-9898

⁸⁴ Hulme, Karen. (2004:7) *War Torn Environment: Interpreting the Legal Threshold*. Boston. Martinus Nijhoff Publishers.

⁸⁵ Hulme, Karen. (2004:7) *War Torn Environment: Interpreting the Legal Threshold*. Boston. Martinus Nijhoff Publishers.

⁸⁶ *Vietnam Association for Victims of Agent Orange vs. Dow Chemical Company ABC 50:Docket Number 05-1953-cv. Argued June 18,2007-February 22,2008* [online] <http://caselaw.findlaw.com/us-2nd-circuit/1177917.html>, (retrieved 27 September 2010)

after an awareness of potential harm. Although the Bionetics study revealed evidential links of teratogenicity found within the lab mice, this causal link was not established in the Vietnamese victims' case from the environmental damage inflicted by Agent Orange.

At the Earth Summit, a precautionary measure was set into motion in order to set forth and enhanced measure of protection for the *natural* environmental going forward. It states:

Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.⁸⁷

An estimated one million people have been registered disabled and hundreds of thousands dead from the poisonous chemicals, stated the Vietnamese Red Cross. Nonetheless, Judge Weinstein had maintained in 2005 that "there is no basis for any of the claims of plaintiffs under the domestic law of any nation or state or under any form of international law, the case is dismissed."⁸⁸

Vietnam Association of Victims of Agent Orange (VAVAO), vice president Nguyen Trong Nhan believes that "it is a wrong decision, unfair and irresponsible."⁸⁹ William H. Goodman adds "the judge missed the point. He ruled as a matter of law that what these defendants manufactured was not a *poison*, whereas even these manufacturers recognized that it was at the time."⁹⁰

Sustainability requires the enforcement of wider responsibilities for the *impacts of decisions*. This requires changes in the legal and institutional frameworks that will enforce the common interest. Some necessary changes in the legal framework start from the *environment adequate* for health and well-being is essential for all human

⁸⁷ United Nations Conference on Environment and Development (UNCED,1992). *Rio Declaration*. Principle 15. Earth Summit Rio de Janeiro. 19th plenary meeting.

⁸⁸ *Vietnam fury at Agent Orange case*, [online] <http://news.bbc.co.uk/og/pr/fr/-/2/hi/asia-pacific/4339419.stm> (retrieved 03 November 2011) (emphasis mine)

⁸⁹ *Vietnam fury at Agent Orange case*, [online] <http://news.bbc.co.uk/og/pr/fr/-/2/hi/asia-pacific/4339419.stm> (retrieved 03 November 2011) (emphasis mine)

⁹⁰ *Agent Orange Case for Millions of Vietnamese Is Dismissed*, <http://www.nytimes.com/2005/03/10nyregion/10cnd-oran.html>, [online] accessed 27 September 2010

beings – including future generations.⁹¹

Other important laws that were invoked in attempt to enforce protection have been enshrined in The Fourth Geneva Convention (GCIV)⁹² ratified by the US in 1955. Articles 146 and 147 put forth the legal provisions to prohibit and enforce the extensive destruction and appropriation of *property* not justified by military necessity and carried out unlawfully and wantonly against protected persons or property. Article 50 also lists as a grave breach the act of “*willfully* causing great suffering or serious injury to body or health.”⁹³ Yet none of these basic provisions seemed to offer *adequate* protection to the *natural* environment as a matter of civilian or state *property*, or protect the civilians from severe unnecessary suffering – which still persists today.

As a result, wartime principles of *proportionality*, *distinction* or *humanity* seem *inadequate*. It is mainly argued that no means could be demonstrated to prove that the chemical herbicides were *intended* to harm humans. Without intent, proportionality and humanity principles could not be invoked. Plaintiffs’ argued that the “defendants were *wanton* and *reckless* in producing herbicides which they knew contained dioxin and would harm people.”⁹⁴ The chemical companies had the information and yet, intentionally, continued to produce products with high concentrations of dioxin which demonstrates *foreknowledge* and hence, *intent*.⁹⁵

In a similar vein, the Nazis’ were also accused of *knowing* that poisonous Zyklon B gas would be used in the concentration camps.⁹⁶ However, this puts a clear attention pinpointing the knowledge and intent of poisonous effects directly onto

⁹¹ World Commission on Environment and Development (WCED 1987:63). *Our Common Future*. Oxford: Oxford University Press. (emphasis mine)

⁹² ICRC.(2008:210-211) *The Geneva Conventions of August 12 1949*. GCIV. Article 146; 147. Geneva, Switzerland

⁹³ ICRC.(2008:43) *The Geneva Conventions of August 12 1949*. Geneva, Switzerland

⁹⁴ *A non-Lawyers Guide to Judge Weinstein’s Agent Orange Decision* [online] <http://www.ffrd.org/Lawsuit/AO%20decision%20analysis.htm>, (retrieved 27 September 2010)

⁹⁵ *A non-Lawyers Guide to Judge Weinstein’s Agent Orange Decision* [online] <http://www.ffrd.org/Lawsuit/AO%20decision%20analysis.htm>, (retrieved 27 September 2010)

⁹⁶ *Vietnam Association for Victims of Agent Orange vs. Dow Chemical Company ABC 50:Docket Number 05-1953-cv. Argued June 18,2007-February 22,2008* [online] <http://caselaw.findlaw.com/us-2nd-circuit/1177917.html>, (retrieved 27 September 2010)

the human person, *not* plants. Since that dismal period, The 1945 *Nuremberg Charter* and the 1951 *Nuremberg Principles* banned war crimes namely, violations of the laws and customs of war, including “murder, ill-treatment or deportation to slave labor or for any other purpose of civilian population of or in occupied territory, murder or ill-treatment of prisoners of war or persons on the seas, killing of hostages, plunder of public or private *property*, wanton destruction of cities, towns or villages, or devastation not justified by military necessity.”⁹⁷ Still, the defense had maintained a lack of what I would refer to as “*environmental intelligence*” as the US armed forces’ *intention* was to kill *plants* only. Vietnam Association of Victims of Agent Orange maintains otherwise.

The US war veterans suffering from the chemical contact received compensation amounting to \$180m by the chemical manufacturers in 1984 for injuries inflicted. Vietnamese victims pursuing similar claims in search of environmental clean-up and justice had their case dismissed in 2005. Upon appeal, it was dismissed once more.

Tagged as a war crime against millions, the US Government, Monsanto, Dow Chemical, Hercules and other associated parties were not held criminally responsible. Dow Chemical lawyer, Andrew L. Frey, believes that people suffering life's random hardships sued because "it's human nature to look for something to blame."⁹⁸

Fund for Reconciliation and Development (FRD) Executive Director, John McAuliffe affirms that “Judge Weinstein has made it easier for our country to continue to evade *moral* responsibility for the consequences of its actions. Regardless of how much chemical companies and the US government knew about dioxin contamination when used as a weapon of war, they should not hide behind legal and scientific technicalities to avoid obligation in addressing an

⁹⁷ *Vietnam Association for Victims of Agent Orange vs. Dow Chemical Company ABC 50:Docket Number 05-1953-cv. Argued June 18,2007-February 22,2008* [online] <http://caselaw.findlaw.com/us-2nd-circuit/1177917.html>, (retrieved 27 September 2010)

ongoing human tragedy traceable to their actions. We constantly hold other countries responsible, but never ourselves.” McAuliffe adds, “sadly, this case fits a pattern of obstructing diplomacy and justice by invoking an extreme version of executive privilege that has no basis in the US Constitution or international law.”⁹⁹

According to Austin and Bruch, this destruction to the natural environment in terms of *scale*, *severity* and *longevity* has led to the first international legal provisions to prohibit environmental destruction in wartime: the ENMOD Convention and Additional Protocol I.¹⁰⁰ Yet with reference to the Vietnam War, Bruch claims, in spite of these environmental damages, “there was *no* attempt to establish responsibility, let alone liability.”¹⁰¹ Foreseen as a relational link toward *Our Common Future*, it has been recommended:

The World Commission on Environment and Development must strike at this fundamental problem by recommending specific ways for countries to co-operate to surmount *sovereignty*, to embrace international instruments in order to deal with global threats. The growing trend towards isolationism demonstrates that the current rhythm of history is out of harmony with human aspirations, even with its chances for survival.¹⁰²

Although troops have withdrawn decades ago, the postwar development burden and sorrow permeates the landscapes and its victims left behind. In addition to the 4.8 million lives lost to Agent Orange, Vietnam is still attempting to recover from severe environmental damage. Poor families sometimes have several disabled children who need a lot of care, which presents a huge social, medical and economic drain.”¹⁰³ We have generation after generation suffering from its

⁹⁸ *Agent Orange, The Next Generation*: [online] <http://www.ffrd.org/Lawsuit/NYTIMES.htm>, (retrieved 27 September 2010)

⁹⁹ *Despite Court Ruling, Campaign for Agent Orange Justice will Continue*: [online] <http://www.ffrd.org/Lawsuit/FRDAOPress.htm>, (retrieved 27 September 2010)

¹⁰⁰ Austin, Jay E. and Bruch, Carl E. (2002:2) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Cambridge University Press. United Kingdom.

¹⁰¹ Bruch, Carl E. Introduction. (2000:41) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E United Kingdom: Cambridge University Press. (emphasis mine)

¹⁰² World Commission on Environment and Development (WCED, 1987:263). *Our Common Future*. Oxford: Oxford University Press.

¹⁰³ *Vietnam: Justice Denied*: [online] <http://www.globalexchange.org/update/publications/3434.html>, (retrieved 27 September 2010)

consequences," William H. Goodman maintains.¹⁰⁴ Indeed the *development* community has started to take action as organizations and donors have coordinated participatory forms of support in the areas of disability, health, environment, vocational training and income generation to make explicit their inclusion of dioxin-affected families and communities in assistance programs.¹⁰⁵ It has been stated that "participatory development approaches pioneered by international NGOs, in cooperation with Vietnamese partners should be extended to reach affected populations."¹⁰⁶

In light of the above reflections, I believe that IHL was *inadequate* in the protection of the *natural* environment during the Vietnam War. The case reveals how *limitations*, even those perceived clear-cut and customary, might become blurred by different legal interpretations and parties of interest. In addition, it demonstrates the weight of legal decisions as a fundamental constituent toward the strengthening or weakening of customary protection, the posture amid international relations and also, how novel methods and means of warfare can be invented where the law is deemed non-existent, for example, the use of environmental modification techniques (EMT) as a weapon of war (to be further discussed in chapter 4).

In the next section, the Gulf War (1990-1991) shall be explored in an attempt to test the legal adequacy of IHL once more. With added environmental provisions inspired by the Vietnam War: is the natural environment *adequately* protected?

3.2 The Gulf War

The Gulf War (1990-91) presents an additional case which makes us reflect upon some vital links between international humanitarian law and sustainable

¹⁰⁴ *Agent Orange, The Next Generation*: [online] <http://www.ffrd.org/Lawsuit/NYTIMES.htm>, (retrieved 27 September 2010)

¹⁰⁵ *Statement of INGO Representative on Supporting People Affected by Agent Orange in Vietnam*: [online] <http://www.ffrd.org/Lawsuit/NGO%20Statement.htm>, (retrieved 27 September 2010)

development. Although it was the Vietnam War which instigated the crime of ecocide, stirring nations to further develop IHL, two decades later; it was the Gulf War stirring the concept of an *eco-criminal*.

As international concerns toward environmental destruction in wartime were escalating, it became clear that a sort of ‘protective package’ was needed. Following the experience of the Vietnam War, it was now foreseeable that the civilian population, environment and postwar development efforts were adversely affected by the widespread, long-term and severe environmental damage. The aftermath of the Gulf War highlights a similar call for help as it was claimed that “...this war left behind a crippled infrastructure unable to meet the needs of a modern society.”¹⁰⁷ And so, as other parts of the world aim to solve often complex and sometimes straightforward obstacles to achieve sustainable development, it is within postwar societies that a heavy burden and added set of challenges remain. Recognizing the unsettling fact that conflict is a cause of unsustainable development, it has been stated that:

Arms competition and armed conflict create major obstacles to sustainable development. They make huge claims on scarce material resources. They pre-empt human resources and wealth that could be used to combat the collapse of environmental support systems, the poverty, and the underdevelopment that in combination contribute so much to contemporary political insecurity. They may stimulate an ethos that is antagonistic towards co-operation among nations whose ecological and economic interdependence requires them to overcome national or ideological antipathies.¹⁰⁸

During the Gulf War, Iraqi armed forces targeted the natural environment with full intent. One of the most alarming attacks was the detonation of roughly 600 oil wells which became “engulfed in flames, spewing out thick billows of smoke that turned

¹⁰⁶ *Statement of INGO Representative on Supporting People Affected by Agent Orange in Vietnam*: [online] <http://www.ffrd.org/Lawsuit/NGO%20Statement.htm>, (retrieved 27 September 2010)

¹⁰⁷ Sarah Zaidi, Sc.D.(1994) “*War, Sanctions, and Humanitarian Assistance: The Case of Iraq 1990-1993*”. Medicine and Global Survival

¹⁰⁸ World Commission on Environment and Development (WCED 1987:294): *Our Common Future*. Oxford: Oxford University Press.

midday into midnight.”¹⁰⁹ The hostile act caused widespread destruction not only to the Kuwaiti environment, but also endangered the entire region.

The smoke generated from the burning oil wells not only polluted the Kuwaiti atmosphere, but also created black rain in Iran and Turkey, and perhaps as far east as India.¹¹⁰ A danger of global environmental threat loomed, as the smoke plumes were climbing to jet-stream heights of 45,000 feet, and that the pollution could then be transported around the globe. Rising to more or less 10,000 to 12,000 feet, at most 22,000 feet,¹¹¹ US Department of Defense, Lieutenant Colonel John Luce states that “a global level environmental disaster from the smoke was averted only by the fortunate wind and temperature conditions.”¹¹²

In addition to threatening the world’s atmosphere, the marine environment was also targeted. Iraqi forces released nearly 6 to 11 million barrels of crude oil into the Persian Gulf in an attempt to clog desalinization plants.¹¹³ Oil pipelines were also diverted into the sea causing severe harm to marine life. In this region, water currents are claimed to typically flow in a counter-clockwise direction, and thus, the oil spills impacted primarily the Kuwaiti and Northern Saudi coast.¹¹⁴ This likely explains the 50 to 75 percent of shorebirds saturated in oil¹¹⁵ capturing worldwide attention and spawning an international outrage. Meanwhile, the damaged oil wells upon the land generated numerous “oil lakes” which ultimately threatened to contaminate the underground water

¹⁰⁹ Schwartz, Daniel M. (1998: 483-496): “*Environmental Terrorism: Analyzing the Concept.*” Journal of Peace Research. Sage Publications. Vol. 35, no.4.

¹¹⁰ Environmental Law Institute. (1998): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives.* Research Report. Washington D.C. 10-12 June.

¹¹¹ Brauer, Jorgen. (2000:13): “*The Effect of War on the Natural Environment.*” Augusta State University.

¹¹² Luce, John R., Lieutenant Colonel. (2000:4): “*Protection of the Environment During War: The Need for a Clear Department of Defense Policy.*” Carlisle Barracks, PA 17013-5050: U.S. Army War College.

¹¹³ Environmental Law Institute (1998): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives.* Research Report. Washington D.C. 10-12 June.

¹¹⁴ Brauer, Jorgen. (2000:13): “*The Effect of War on the Natural Environment.*” Augusta State University.

¹¹⁵ Brauer, Jorgen. (2000:23): “*The Effect of War on the Natural Environment.*” Augusta State University.

table as oil seeped through the desert soil.¹¹⁶ Hulme adds a sense of *precaution* in this regard:

The damage inflicted upon an ecosystem may not be confinable to that particular country or region. To protect a single ecosystem one must work to protect the global ecosystem and vice versa.¹¹⁷

As one of the largest oil spills ever created in history, as well as other *military activities* endangering ‘the global ecosystem’— how was the *natural* environment protected under international humanitarian law? Strikingly, in light of all the intentional destruction, divergent views remain as to *if* these Iraqi military activities constituted a violation of IHL – for several reasons.

Prior to the conflict escalation, Hussein threatened to attack the Kuwaiti oil fields *if* coalition forces got involved. Shortly afterward on January 17, 1991, the coalition forces started an air campaign in an attempt to defend the territory of Kuwait and put an end to Iraq’s unlawful invasion. For that reason, Hussein ordered the detonation of 1250 oil wells¹¹⁸ even though the Charter of the United Nations states:

Recalling that every State has the duty, in conformity with the Charter of the United Nations, to refrain in its international relations from the threat or use of force against the sovereignty, territorial integrity or political independence of any State, or in any other manner inconsistent with the purposes of the United Nations.¹¹⁹

Some IHL analysts argue that the oil wells could have been used a legitimate *military objective*. The huge amounts of oil-fire smoke could have been a means to “impede the vision of the allied forces.”¹²⁰ Provided that air support, reconnaissance flights and satellite imagery were adversely impacted¹²¹ by the smoke screen, Hussein achieved his objective. However, this perspective suggests that the action was a *military necessity*

¹¹⁶ Environmental Law Institute. (1998): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

¹¹⁷ Hulme, Karen. (2004:13): *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

¹¹⁸ Schwartz, Daniel M. (1998: 483-496): “*Environmental Terrorism: Analyzing the Concept*.” Journal of Peace Research. Sage Publications. Vol. 35, no.4.

¹¹⁹ *Charter of the United Nations* (1945)

¹²⁰ Schwartz, Daniel M. (1998: 483-496): “*Environmental Terrorism: Analyzing the Concept*.” Journal of Peace Research. Sage Publications. Vol. 35, no.4.

and as such, the harm to the *natural* environment was purely “collateral damage.” Nevertheless, according to coalition forces this argument did not hold.

Coalition forces stated that Hussein merely acted upon a threat “to spite the international community.”¹²² According to the US Senate Gulf Pollution Task Force, “Iraq's actions were *not* supportable by *military necessity*.”¹²³ To be considered a *legitimate* military objective, the burning of the oil wells needed to offer a definite *military advantage*.

In view of the fact that the oil wells were located on the ‘occupied territory’ of Kuwait, and seeing the Iraqi forces withdrawing as the defeated enemy, Dinstein claims that the “systematic destruction could not have possibly affected the progress of the war...and as such, did *not* offer a definite *military advantage* in the circumstances ruling at the time.”¹²⁴ He emphasizes that “‘scorched earth’ policy is permitted to retreating troops only when the area affected belongs to the belligerent party, and not to the enemy.”¹²⁵ With consideration regarding the *excessive* injury to the environment and civilian population from the “monstrous air pollution,” Dinstein maintains that the oil-well fires constituted a breach in the *proportionality* principle.¹²⁶

It is commonly agreed that Iraq violated treaty law and customary international law. The fundamental principles of *military necessity* and *proportionality* have been claimed as violations given that the only acts permitted in wartime are those that are

¹²¹ Gamble, Richard O., LCDR, CEC, USN. (1992:18-19): *Anti-Environmental Warfare: Protecting the Environment During Wartime*. Newport, RI, USA : Naval War College.

¹²² Schwartz, Daniel M. (1998:483-496): “*Environmental Terrorism: Analyzing the Concept*.” Journal of Peace Research. Sage Publications. Vol. 35, no.4.

¹²³ Schwartz, Daniel M. (1998:483-496): “*Environmental Terrorism: Analyzing the Concept*.” Journal of Peace Research. Sage Publications. Vol. 35, no.4. (emphasis mine)

¹²⁴ Dinstein, Yoram (2004:192): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press. (emphasis mine)

¹²⁵ Dinstein, Yoram (2004:192-193). *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

¹²⁶ Dinstein, Yoram (2004:192): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

“proportional to the lawful objective of the military operations and actually necessary to achieve that objective.”¹²⁷

Iraq allegedly also violated the 1907 Hague Regulation, Article 23(g), as it prohibits the destruction or seizure of the enemy's *property*, unless such destruction or seizure be imperatively demanded by the necessities of war.¹²⁸ Geneva Convention IV, Article 53 also forbids the destruction by an Occupying Power of both private and public property within an occupied territory, except where such destruction is rendered absolutely necessary by military operations.¹²⁹ And Article 147 lists the ‘extensive destruction...of *property*, not justified by military necessity and carried out unlawfully and wantonly as a grave breach of IHL.¹³⁰

Michael Schmidt asks, “Can the land, water supplies, animals or crops be reasonably argued as *property*?” What about Kuwait’s air contaminated by oil fires, or the stocks of fish or migratory birds which suffered from the oil spill? Is the air, fish or migratory birds considered property of Kuwait?”¹³¹ These are some reasonable considerations while attempting to assess where the line is (or should be) drawn regarding the extensive destruction of a State’s property from an environmental viewpoint.

When an oil refinery is struck, this may give rise to toxic air pollution. When an oil storage facility is demolished, the oil may seep into the ground and poison water resources. When an oil tanker is sunk at sea, the resultant oil spill may be devastating for marine life.¹³²

Is it possible that the *natural* environment was protected under the 1976 *United Nations Convention on the Prohibition of Military or other Hostile Use of Environmental Modification Techniques* (the ENMOD Convention)? According to the Second Review Conference, the intentional detonation of hundreds of oil wells was indeed considered a

¹²⁷ Adede, Andronico O. (1994:174): “*Protection of the Environment in Times of Armed Conflict: Reflections on the Existing and Future Treaty Law*.” Annual Survey of International & Comparative Law Vol.1: Iss. 1, Article 7

¹²⁸ Convention (IV) Respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land. The Hague, 18 October 1907

¹²⁹ Dinstein, Yoram (2004:192-193): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

¹³⁰ ICRC (2008:211): *The Geneva Conventions of August 12 1949*. Geneva, Switzerland: ICRC. (emphasis mine)

¹³¹ Schmitt, Michael N.(2003): “*Humanitarian Law and the Environment*.” Denv. J. International Law and Policy Vol. 28:3.

¹³² Dinstein, Yoram (2004:176): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

hostile act which met all three criteria of *widespread, long-lasting or severe* damage as understood under Article I of the Convention.¹³³ Despite that it is still claimed *not* enough to make the ENMOD Convention applicable to Iraq for two reasons:

- 1) Iraq is not party to ENMOD, and hence cannot be found in breach from a legal perspective
- 2) The act of setting fire to oil wells remains questionable as to *if* it would qualify as an environmental modification technique (EMT)¹³⁴

While Iraqi military actions reignited interest in the ENMOD Convention, scholars reconsidered the practical application of the law. Amid the discussion, it was suggested that as an ENMOD signatory, Iraq was under an “obligation to refrain from such acts which defeat the object and purpose of the Convention.”¹³⁵ Be that as it may, it was considered *inadequate* to hold Iraq liable for the environmental damage.

Secondly, on the subject of the burning oil wells satisfying the environmental modification technique criteria there have been mixed views. It is arguable that the action could meet the criteria as a modification technique considering that the oil fires upset the ecological balance of the region and changed weather patterns as listed within the illustrative phenomena under Article II.¹³⁶ The trouble with the EMT qualification is regarding the element “*deliberate manipulation of natural processes*.” On the one hand, it has been asserted that setting oil wells afire is not a *deliberate* manipulation of natural processes; however, on the other hand, the massive oil fires did “*manipulate*” at least one natural process – photosynthesis. As thick layers of soot hovering in the atmosphere could feasibly block the rays of the sun adversely impacting plant growth.¹³⁷

Overall, it is upheld that Iraqi military activities did *not* violate the ENMOD Convention however, possibly violated Additional Protocol I (API) because of *intended*

¹³³ *Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques*. Geneva, 14-21 September 1992

¹³⁴ *Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques*. Geneva, 14-21 September 1992

¹³⁵ *Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques*. Geneva, 14-21 September 1992

¹³⁶ *Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques*. Geneva, 14-21 September 1992

¹³⁷ *Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques*. Geneva, 14-21 September 1992

or *may be expected* elements of the widespread, long-term and severe damage. Indeed, the intended element is evident, though, the long-term requirement to meet the *widespread, long-term and severe* (WLS) threshold was not satisfied. Although scientists initially predicted long-term catastrophic consequences to the natural environment, “the desert ecosystem (which includes the marine environment) had proven to be remarkably resilient.”¹³⁸ Accordingly, it is argued that WLS threshold of harm is *too high*.

Regardless of the varying arguments, Iraq was not a contracting Party to API, and thus, *not* duty-bound. Dinstein had considered the most intriguing question under IHL to be *if* the oil fires constituted a breach of ENMOD and API, he concludes – “The simple answer is negative.”¹³⁹

Even though the Gulf War may have seen the most severe wartime environmental damage in history, it is unclear whether either ENMOD or API applied: Iraq had not ratified ENMOD and had neither signed or ratified API. The Security Council could have argued, but did not, that the relevant norms of these conventions reflected customary international law, and thus the entire international community - including Iraq - was bound by the provisions. The Security Council’s silence on the matter did little to affirm the treaties strength.¹⁴⁰

Maintaining a balanced view, however, Iraq was not the only belligerent in question. It seems important to highlight that the coalition forces also had a severe impact on the environment. Iraqi nuclear facilities, industrial production facilities, chemical facilities, as well as water and sanitation infrastructures¹⁴¹ were all selected targets as *military objectives*.

It is alleged that the battlefield became like a toxic soup. The UK and US fired relatively 320 tons of depleted uranium (DU) ammunition, which upon hitting hard targets causes a release of radioactive dust. The gravest threat is that the radioactive dust can possibly enter into the *air, soil and water* causing severe, long-term, and

¹³⁸ Brauer, Jurgan. (2000:11): “*The Effect of War on the Natural Environment*.” Augusta State University.

¹³⁹ Dinstein, Yoram (2004:193): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

¹⁴⁰ Environmental Law Institute. (1998:7): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

¹⁴¹ Brauer, Jurgan. (2000:12): “*The Effect of War on the Natural Environment*.” Augusta State University.

possibly transboundary harm; the duration of DU is estimated to be 4.5 billion years. The US and its coalition forces did not face any charges.¹⁴² Further research on the reason for their dismissal is still needed.

These new instruments of international law that were motivated by the devastating effects of the Vietnam War, the ENMOD Convention and Additional Protocol I, seemed unable to protect the *natural* environment throughout the Gulf War. There are even more considerations and challenges which highlight the inadequacies toward the protection of the natural environment in a wartime context. While attempting to establish the extent of environmental damage, it seems that other issues are imposing a setback in the ability to enforce environmental protection. Some of the top concerns are a lack of environmental baseline data, valuation methodologies, and the ability to pinpoint liability matters. In addition, it seemed important to rethink *how* these legal mechanisms can be made to function in order to gain respect of the international community.¹⁴³

Regardless of these added complexities, the international response sent a clear message. In a ‘civilized’ world, this extent of destruction unto the *natural* environment should be considered unacceptable and punishable under international law. This position is upheld in view of the fact that although IHL was deemed *inadequate* in the protection of the *natural* environment, under Chapter VII of the United Nations Charter, the Security Council held Iraq liable by the adoption of Resolution 687. Jensen states that “this could set the legal precedent for future armed conflicts.”¹⁴⁴ In addition, Kuwait filed claims concerning the damage to its natural resources, such as lost oil, damaged fisheries, business losses and related public health concerns.¹⁴⁵ The United Nations Compensation Commission (UNCC) was also established to settle these claims based

¹⁴² Brauer, Jorgen. (2000:32): “*The Effect of War on the Natural Environment*.” Augusta State University.

¹⁴³ Environmental Law Institute. (1998:20): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

¹⁴⁴ Jensen, Eric T. (2005): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145.

¹⁴⁵ Environmental Law Institute (1998:18): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

on a trust fund created by Iraq's frozen international assets and oil export revenues. The asserted value of these claims amounted to \$250 billion.¹⁴⁶ As the Stockholm Declarations sets forth:

States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.¹⁴⁷

All in all, it is claimed that Iraq still suffers not only from the sobering realities from its own government, but also from the added burdens imposed upon it from the international community. Brauer claims that it is the “people carrying the brunt of the punishment in the form of economic sanctions, frozen assets, reparation payments, and consequent economic disaster imposed on Iraq.”¹⁴⁸

Although the legal framework of international humanitarian law has compliance mechanism in position to ensure the respect of wartime rules and principles, commonly referred to as *Protecting Powers*, it did not prompt countermeasures by other States Parties, either individually or collectively. In the end, it appears that IHL did not offer protection to the *natural* environment in this case, and hence, seems *inadequate* to protect this fundamental component of sustainable development. According to Dinstein:

...the wrongful act which has engaged Iraq's State responsibility under international law for any environmental damage on the illegal invasion of Kuwait in breach of the UN Charter and customary international law, rather than on law of international armed conflict. In other words, Iraq's obligation to pay compensation for environmental damage (in conformity with Resolution 687) was derived from a flagrant violation of the *jus ad bellum* and *not* from any possible breach of the *jus in bello*.¹⁴⁹

¹⁴⁶ Drumbl, Mark A. (2001). “*International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?*” NSU Law. ILSA Journal

¹⁴⁷ UNCHE (1972): *The Stockholm Declaration*, Principle 22

¹⁴⁸ Brauer, Jorgen. (2000:33): “*The Effect of War on the Natural Environment*.” Augusta State University.

¹⁴⁹ Dinstein, Yoram (2004:196). *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press. (emphasis mine)

3.3 The Kosovo Conflict

Prior to the 1999 Kosovo conflict, the protection of the *natural* environment was a basic obligation for *all* States in wartime. Its formal consideration had been accepted as custom into the corpus of international law. Driven by recognition of *ecocides* and *eco-criminals* a piecemeal approach was taken to enhance protection of the natural environment from anthropocentric and biocentric viewpoints. However, shortly after the Gulf War, within the past decade or so, another ecological devastation occurred. Once again, the world observed, and strong concerns were raised regarding Serbian armed forces and NATO military activities as well as present legal obligations to respect the *natural* environment during hostilities. Upon entering the 21st century, was IHL *adequate*?

During the Kosovo air campaign, the then present legal regime was claimed to become eroded.¹⁵⁰ Even though military command was required to offer due consideration to the *natural* environment, NATO forces signalled the ‘green light’ to heavily target an industrialized country. In a sequence of targeting decisions upon oil refineries, industrial product storage facilities, and petrochemical sites, in addition to, the controversial use of depleted uranium (DU) munitions, the conflict earned a title as a “low intensity nuclear war.” However, the series of high-altitude bombings also triggered something else – severe criticism. As Bruch states:

NATO deliberately attacked environmentally sensitive targets despite the obvious prospect of serious pollution of regionally important international waterways and other forms of environmental harm.¹⁵¹

Before reviewing the most destructive wartime actions, it seems important to highlight that the hostilities began as an internal conflict of “low intensity.” In a non-international armed conflict (NIAC) or internal conflict, there is a limited

¹⁵⁰ Bruch, Carl E. Introduction. (2000:4-149-150) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁵¹ Bruch, Carl E. (2000:4-149-150) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

and *indirect* method of protection available for the *natural* environment under Additional Protocol II (APII). Being considered by some as inadequate, further provisions were proposed in order to strengthen environmental protection more *directly* during periods of internal conflict, but the proposal was discarded. Nevertheless, the former refusal does not dismiss the threatening reality that even belligerents within the territory of their own State might also consider *direct* methods and means of inflicting environmental damage, as formerly highlighted regarding the ecocide in Russia and China.

There are internal matters of violence as Serbian forces and other organized armed groups (OAG) deliberately poisoned water wells, and used scorched earth tactics to drive the Albanians from their homeland. During hostilities of a non-international character, customary law and APII is the legal regime applicable among the High Contracting Parties (HCP). Within Additional Protocol II, there are two provisions enshrined which theoretically present an arguable case to consider the *adequacy* of international humanitarian law. Article 13 is pertinent as it aims to provide protection for the civilian population and Article 14 as it aims to protect objects indispensable to the civilian population, such as “drinking water installations and supplies.”¹⁵²

Yet the character of the conflict is not “set in stone.” Taking the decision to halt genocide within the Federal Republic of the Former Yugoslavia, NATO forces got involved. With NATO’s participation, the conflict shifted from an internal conflict to an international armed conflict (IAC) character. Therefore, the legal regime applicable also shifted. Although this shift into an international conflict could bring into play one of the strongest set of rules for environmental protection in wartime under Additional Protocol I, there are concerns surrounding its full and equal application. It is important to note that albeit the ‘majority’ of NATO member states are contracting Parties to Additional Protocol I, France, Turkey and the US were not duty-bound.

From its unique position, some of NATO's military actions received substantial attention. The most striking were made during the Kosovo air campaign. NATO had clearly made the political decision to use high-altitude bombing despite the consequences of its environmentally sensitive targets. However, it was a tactical decision and weaponry selection that would not escape backlash.

Not only were states becoming more involved with protective concerns for the *natural* environment in wartime, but also non-governmental organizations (NGO) and the civilian population started to take action. In an attempt to defend their territorial integrity, NGOs and average citizens began to detail information concerning the environmental damage through monitoring, documenting and broadcasting reports of the severe environmental impacts using the Internet and media.¹⁵³ And once more, the legitimacy of IHL and its provisions to protect the *natural* environmental became challenged. As the World Charter for Nature declares:

States are to work co-operatively to safeguard and conserve nature in areas beyond national jurisdiction; all persons shall have the opportunity to participate in the formulation of decisions of direct concern with their environment and shall have means for redress when their environment has suffered damage or degradation.¹⁵⁴

During NATO's 78-day campaign, more than eighty industrial facilities¹⁵⁵ were bombed. The destruction of the Pancevo petrochemical complex and Novi Sad delivered a *severe* blow to the environment. The initial assessment is that "1,500 tons of vinyl chloride (a known carcinogen), 15,000 tons of ammonia, 800 tons of hydrochloric acid, 250 tons of liquid chlorine, 100 tons of mercury, and significant quantities of dioxin (a carcinogenic and mutagenic industrial by-product that is also found in Agent Orange)" were released. Consequently, as *side-effects* or collateral damage of these toxic targets, food crops and fish stocks

¹⁵² Bruch, Carl E.(2000:648) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁵³ Bruch, Carl E. (2000:4-5) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁵⁴ *World Charter for Nature* UN GA RES 37/7 (1982)

became contaminated by the poisonous gases, miscarriage rates doubled and human illnesses increased. To this day the *long-term* damages to the natural environment are *unknown*.¹⁵⁶ Bruch claims as a *precautionary* measure that:

Activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, the activities should *not* proceed.¹⁵⁷

Other than the discharge of the aforesaid toxic substances, NATO's destruction of the petrochemical fertilizer and oil refinery complex released vast amounts of oil, gasoline, and another powerful carcinogen known as dichloride into the Danube River.¹⁵⁸ A western observer tagged the scene as an "ecological disaster" as hazardous pollutants drifted downstream into Romania and next Bulgaria, and then eventually into the Black Sea.¹⁵⁹ Additional transboundary environmental damage was reportedly caused by the destruction of civilian infrastructures such as sewage treatment facilities.

NATO Director of Policy Planning in the Private Office of the Secretary General, Dr. Jamie Patrick Shea claims the *long-term* damage as exaggerations on the environmental front. His response during NATO's press conference used the following justification:

...let's not forget that when our pilots fly over Yugoslavia and see a lot of smoke, the smoke is coming from all of these burning villages in Kosovo and if you're talking about environmental damage, I think the "scorched earth" policy applied to Kosovo, the destruction of livestock, the destruction of rivers and roads and communication routes, the destruction of the agriculture, the slaughtering of a large percentage of the cattle and the livestock, is going to be much more significant in the long term and

¹⁵⁵ Bruch, Carl E. (2000:649-650) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁵⁶ Bruch, Carl E. (2000:649-650) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁵⁷ UNGA (1982) A/RES/37/7: [online] <http://www.un.org/documents/ga/res/37/a37r007.htm> (11,b) (retrieved 3 July 2010)

¹⁵⁸ Drumbl, Mark A. (2001:3). *International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?* NSU Law. ILSA Journal

¹⁵⁹ Drumbl, Mark A. (2001:3). *International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?* NSU Law. ILSA Journal

incidentally require a lot more money to fix than the repair of some oil refineries.¹⁶⁰

Stuck between polar opposite positions, what does international humanitarian law add to the debate? One attention-grabbing argument is regarding the customary principle of *distinction* between civilian objects and military objectives. NATO was required to strike a balance in this regard while also weighing considerations of *humanity*, and *proportionality* in conjunction with *military necessity*.

Franck asserts that the assessment of *proportionality* in the NATO bombing case is a difficult one. The reason specified is that “the accepted interpretation is that *overall* military advantage is considered in the proportionality analysis, not just that resulting immediately from the attack.”¹⁶¹ But then, what could be said about the targeting of a fertilizer plant as meeting the conditions of *military necessity* and hence, contributing to the overall *military advantage*?

According to Hulme, the qualification of Pancevo as a military objective is a dubious one.¹⁶² She adds that the fertilizer plant supplies products which sustain the agricultural sector which cater to possibly both civilian and military purposes, and unless the plant was converted to serve “wholly” military use it would fall outside the definitional scope provided within API Article 52(2).¹⁶³ Dr. Ing. Slobodan Tresac, general director of the HIP Petrochemical plant at Pancevo reported that the facility was not used for military purposes. If so, the attack would be unlawful.¹⁶⁴

Bruch and Austin put forth the argument that since the location of the Pancevo complex was only 16km from Belgrade, “it raises some troubling concerns about

¹⁶⁰ NATO Press Conference (30 April 1999): [online] <http://www.nato.int/kosovo/press/p990430a.htm>, (retrieved 3 July 2010)

¹⁶¹ Franck, Thomas M. (2008:736) “On Proportionality of Countermeasure in International Law.” The American Journal of International Law. American Society of International Law. Vol. 102, No. 4. pp. 715-767 (emphasis mine)

¹⁶² Hulme, Karen. (2004:199-200) *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

¹⁶³ Hulme, Karen. (2004:199-200) *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

¹⁶⁴ Hulme, Karen. (2004:199-200) *War Torn Environment: Interpreting the Legal Threshold*. Boston: Martinus Nijhoff Publishers.

the very nature of the balancing test.”¹⁶⁵ Not only is it unlawful to attack a military objective with disproportionate methods or means of warfare, but also the risks to the civilian population *must* be part of the military calculation. It has been suggested that although these facilities were indeed civilian infrastructures, they may have served a ‘*dual-use*’ purpose as the facilities also provided gasoline and other products to the Serbian armed forces. NATO maintains that “Pancevo was considered to be a very, very important refinery and strategic target, as important as tactical targets inside Kosovo.”¹⁶⁶ Regarding these environmental consequences of wartime, Bruch put forth some added reflections on the law of war, as he states:

This remarkable statement underscores the vagueness and inherently manipulability of the existing law-of war provisions limiting wartime environmental damage, and the difficulty in trying to make them universally applicable. The complex calculations that factor into the balancing test cannot, and should not, be reduced to the number of times the target's importance is prefixed with the word "very."¹⁶⁷

Schmitt maintains that a universal metric does not exist for assessing the weight of countervailing interests. As mentioned earlier, the shield of protection that is afforded to *civilian objects* under international humanitarian law may be withdrawn if the target is deemed an imperative military necessity. Even though NATO forces did perceive these targets as legitimate *military objectives*, it is important to note that the notion of military necessity does *not* give carte blanche to military command. Upon defining a legitimate military objective, the ICRC reported that there *is* a need “to avoid excessive long-term damage to the *natural* environment with consequential adverse effects on the civilian population.”¹⁶⁸

Regarding Additional Protocol I (API), there are some added reflections which challenge the applicability and *adequacy* of its environmental provisions offering

¹⁶⁵ Bruch, Carl E.(2000:649-650) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E Cambridge University Press. United Kingdom.

¹⁶⁶ Bruch, Carl E.(2000:649-650) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E Cambridge University Press. United Kingdom.

¹⁶⁷ Bruch, Carl E.(2000:649-650) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E Cambridge University Press. United Kingdom.

¹⁶⁸ ICRC: “*Environmental damage in times of armed conflict - not "really" a matter of criminal responsibility?*” Geneva, Switzerland: ICRC.

direct protection. Once again, these reflections involve an understanding of the widespread, long-term *and* severe threshold set forth in Articles 35(3) and 55.

To summon protection, a cumulative “widespread, long-term *and* severe” damage onto the *natural* environment needs to be ‘proven.’ The first hurdle is that these terms ‘widespread’ and ‘severe’ are *not* defined under API. With respect to the Pancevo and Novi Sad attacks, Bruch and Austin claim that “the clouds of toxic chemicals, contaminated waterways, and soiled earth may have had and continue to have, *severe* health and environmental impacts. Some of the known contaminants, such as mercury and dioxin, retain their toxicity indefinitely and bioaccumulate.”¹⁶⁹ *If* environmental damage can also be proven to last for ‘*decades*’ in order to satisfy the *long-term* element, and *if* the transboundary effects could be proven to satisfy the *widespread* element, then perhaps, a *limitation* upon this extent of environmental destruction could be established under API and made to constitute a violation of international law in a wartime context. The strength in satisfying the widespread, long-term *and* severe threshold resides in the fact that there is *no exemption* for military necessity. Once the threshold is fulfilled, the act is *illegal*. Yet it is uncertain as to the testing of its legal *adequacy*. As Schmitt recalls, “These provisions have yet to be applied in practice.”¹⁷⁰

Another thorny theme to give consideration to is the application of Additional Protocol I Article 35(3) and 55, regarding non-contracting Parties in coalition forces, for instance, NATO. Even though the majority of NATO member states are contracting Parties to Additional Protocol I, and provided that the Kosovo air campaign was led by US armed forces, which are not Party to the Protocol – which legal regime would be applicable? Further research is still required relating to allied forces and rules applicable in the event armed conflict.

¹⁶⁹ Bruch, Carl E.(2000:652) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E Cambridge University Press. United Kingdom. (emphasis mine)

¹⁷⁰ Bruch, Carl E.(2000:652) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E Cambridge University Press. United Kingdom.

Under API, some other considerations may be provided to critically assess the *adequacy* of IHL concerning protection of the *natural* environment. Rewinding to the ‘*dual-use*’ exemption, it has been stated that the US and NATO rested their decisions to target based on this premise. Article 52 provides general protection for civilian objects. However, *if* the civilian object becomes a military objective by its *nature, location, purpose* or *use* making it an effective contribution to the military action and whose total or partial destruction, capture or neutralization in the circumstance ruling at the time, offers a definite military advantage,¹⁷¹ such protection may cease. For instance, considering that Pancevo produced gasoline and other products for the Yugoslav army, it became a legitimate target.¹⁷²

On the other hand, regarding “environmentally sensitive targets” other tactical and strategic considerations must be given as stated under Articles 56 and 57. For example, Article 56 affords *special protection* for “works or installations containing dangerous forces...even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population.”¹⁷³ All the same, this special protection could cease if the work or installation is “used in regular, significant and direct support of military operations and if such attack is the only feasible way to terminate such support.”¹⁷⁴ The question is, now, was it *necessary* to repeatedly bomb the industrial facilities and oil refineries from high altitudes, or was there an alternative to terminating the supply of gasoline and other products?

Under obligation to weigh *all* considerations and protect the civilian population, it is highly probable that the explosion of all the aforesaid military objectives would release “dangerous forces.” Additionally the effects of such attacks could also inflict indiscriminate *widespread, long-term* and *severe* damage to both the

¹⁷¹ Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I) 1977, Article 52(2)

¹⁷² Bruch, Carl E.(2000:653) The Environmental Consequences of War. Legal Economic, and Scientific Perspectives. Edited by Austin, Jay E. and Bruch, Carl E Cambridge University Press. United Kingdom.

¹⁷³ Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I) 1977, Article 56(1)

¹⁷⁴ Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I) 1977, Article 56(2)

civilian population and the *natural* environment. Alternatively, it has been proposed that instead of attacking Pancevo complex as a ‘whole’, could there have been another tactic such as cutting off supplies or delivery routes from the facility through use of precision guided munitions?¹⁷⁵ The argument does seem to put forward a feasible alternative with respect to targets of an environmentally sensitive nature.

Article 57 obliges the military command to take complete *precautions*:

- 1) In the conduct of military operations, *constant care* shall be taken to spare the civilian population, civilians and civilian objects.
- 2) With respect to attacks, the following precautions shall be taken:
 - a. those who plan or decide upon an attack shall
 - i. do *everything* feasible to verify that the objectives to be attacked are neither civilian nor civilian objects and are not subject to special protection but are military objectives...and;
 - ii. take *all feasible precautions* in the choice of means and methods of attacks with a view to avoiding, and in any event minimizing, incidental loss of civilian life, injury to civilians and damage to civilian objects.¹⁷⁶

Prior to launching an attack, the laws states that if the damage may be expected to be excessive in relation to the concrete and direct military damage,¹⁷⁷ military command should refrain from taking that particular action. Similar considerations should also be given if the methods and means may cause effects which *cannot* be limited to the military objective and thus, inherently indiscriminate. As Bruch recalls:

NATO's assertion that, “the anticipated ‘very, very important’ military advantage outweighed the incidental human and environmental loss highlights the subjective nature of this decision, as well as the lack of meaningful criteria for evaluating it.”¹⁷⁸

¹⁷⁵ Bruch, Carl E.(2000:653) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁷⁶ *Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I) 1977*, Article 57(1,2 a i-ii) (emphasis mine)

¹⁷⁷ *Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I) 1977*, Article 57(2 a iii)

¹⁷⁸ Bruch, Carl E.(2000:653) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

The conclusion with respect to NATO's high-altitude bombing campaign was that although civilian casualties were unfortunately high, the "tactics deployed did not appear to be clearly disproportionate."¹⁷⁹

To uncover the scope of the environmental damage from a scientific viewpoint, UNEP established the Balkans Task Force (BTF) to conduct an investigation. The report concluded that there was "no environmental catastrophe," but "serious pollution" posing a threat to human health in particular hot spots. Regarding assessments of *long-term* ecological impacts, this proved to be a difficult situation for several reasons.

First of all, a *lack of baseline environmental data* is a prevalent issue. Second, it has proven difficult to ascertain which damage was caused during wartime as opposed to peacetime related activities.¹⁸⁰ Questions also had arisen as regarding liability for the environmental damage and how to prove exactly who did what – was it the Serbian armed forces or NATO? In addition, how might complex transboundary assessments be conducted without the proper monitoring facilities or environmental technologies?

The indictment of President Slobodan Milošević for war crimes and the allegations for Serb atrocities was addressed by the International Criminal Tribunal for the Former Yugoslavia (ICTY).¹⁸¹ In addition, Federal Republic of Yugoslavia brought forth several matters before the ICJ as alleged breaches of "the obligation not to cause considerable environmental damage; the obligation not to cause far-reaching health and environmental damage; and the obligation

¹⁷⁹ Franck, Thomas M. (2008:736) "On Proportionality of Countermeasure in International Law." The American Journal of International Law. American Society of International Law. Vol. 102, No. 4. pp. 715-767

¹⁸⁰ Bruch, Carl E. (2000:660) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁸¹ Bruch, Carl E. (2000:658) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

not to use prohibited weapons,”¹⁸² was filed in a lawsuit against ten NATO countries.

Several roadblocks surfaced in the attempt to hold NATO liable for the environmental damage. Bruch and Austin point out that the ICJ is a consent-based system of jurisdiction. Amid this political atmosphere and the safeguard of national sovereignty, it has been suggested that in the “absence of a permanent legal fora,” the Security Council or an ad hoc fact finding mission is likely the only alternative to take further action toward the investigation of postwar environmental conditions.¹⁸³ Additional Protocol I (API) Article 90 encourages the formation of such an impartial International Fact-Finding Commission authorized to enquire into facts alleged to be a grave breach.¹⁸⁴

In view of the fact that the US and Spain did not consent to ICJ jurisdiction, the case brought against them was dismissed. Jurisdictional matters for the other eight countries underwent further consideration. Importantly to note, API has *not* yet been applied to an international tribunal.¹⁸⁵

In the Committee Report addressing the concerns about the environmental damages suffered as a consequence of the NATO bombing campaign, it had been concluded that the Prosecution “should not commence an investigation into the collateral environmental damage caused by the NATO bombing campaign.”¹⁸⁶ This closing remark brings forth added concerns with respect to the overall *adequacy* of addressing the environmental consequences of war, the establishment of normative practice, and highlights the institutional limitations toward enforcing liability in an even handed manner. Bruch maintains:

¹⁸² Bruch, Carl E. Introduction. (2000:559) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁸³ Bruch, Carl E. Introduction. (2000:560) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁸⁴ *Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts* (Protocol I) 1977p.67

¹⁸⁵ Bruch, Carl E.(2000:651) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

¹⁸⁶ ICRC: *Environmental damage in times of armed conflict - not "really" a matter of criminal responsibility?* Geneva, Switzerland: ICRC.

...if the law of war is to maintain its legitimacy and universal applicability, and not become just something imposed ad hoc by victors, the international community needs to undertake a credible examination of whether and to what extent NATO's actions comported with the international law of war... Unless acceptable conduct is explicitly and specifically detailed and the standards applied equally to all sides, conduct of these humanitarian efforts will remain of questionable legality, and could threaten the overall legitimacy of the international law of war regime.¹⁸⁷

The space of the thesis is too limited to address a grave threat in my analysis – the military's use of depleted uranium (DU). In short, DU is a by-product of the uranium enrichment process; it has been classified as a radiological hazard. Although there is scientific *uncertainty*,⁹ the mounting evidence of its ill-effects and persistency are horrendous. In the case of Kosovo, severe damages of the use of depleted uranium could have been foreseeable, as it was used in the Gulf War. To summarize the use of depleted uranium's indiscriminate and inhumane nature, mothers of Iraq, instead of asking if their child is a boy or girl, ask the doctor – “is it normal”?

Some proclaimed effects of the DU range from low birth weight to skeletal abnormalities for doses at which the mother exhibited signs of chemical toxicity. Other recurrent birth defects include deformed or missing eyes, ears, nose, tongue, and genital organs. The cause of these birth defects is unknown; however, it is alleged to be a result of a mother to foetus transmission due to the radiological contamination. UK Atomic Energy Agency which provides expertise on matters of radiological hazards warned that depleted uranium radioactivity poses a “significant problem.” Upon impact of a hard target, the depleted uranium being released could enter into the *air, water, soil* and then pollute the natural environment for an *indefinite* period.

UNGA RES 51/45E has condemned the use of depleted uranium. Reports indicate that NATO admitted use of depleted uranium during the Kosovo conflict at 112 sites. Amid reports the US admitted launching 10 tons

¹⁸⁷ Bruch, Carl E.(2000:655-659) *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

worth of depleted uranium munitions in air-strikes. It is claimed that 90-95 missed the intended target.

The Royal Society has warned that the carcinogenic and mutagenic health risks may be grossly underestimated by current theories. With its uncontrolled and unpredictable potential for depleted uranium to be carried across borders through the elemental forces of nature, not only has Kosovo suffered severe damage from its illegal use, but also it may likely extend beyond the Balkans into Albania and Macedonia, as well as Greece, Italy, Austria, and Hungary.

Considering that NATO is one of the world's most powerful military forces, it seems important to highlight that their leadership and military action could serve as a role model for organized armed groups (OAG) or possibly terrorist organizations. NATO actions could likely send signals as to what is considered *permissible* in wartime. Immanuel Kant reminds "Act that your principle of action might safely be made a law for the whole world."

We approach the millennium in a world in which global interdependence is the central reality, but where absolute poverty and environmental degradation cloud our vision of a common future, and where a geopolitical climate dominated by nuclear terrorism and increasing militarization saps the idealism of the young and the will to dream in us all.¹⁸⁸

¹⁸⁸ World Commission on Environment and Development (WCED 1987:301) *Our Common Future*. Oxford: University Press.

4. International Humanitarian Law and the Natural Environment

4.1 The Origin of International Humanitarian Law

Moral principles amid heated and bloodied battlefields can be traced back to ancient civilization. Inscribed within hallowed texts as the Old Testament and the Holy Qur'an, the code for a more civilized conduct respecting the *natural* environment can easily be found. Considered once a sacred obligation, armies were forbidden to wield an axe against trees which provided them sustenance.¹⁸⁹ Animals held a similar fate as wanton destruction and unnecessary suffering amongst non-human life was also considered immoral and unacceptable. As officers of some Muslim armies had a “duty to ensure trees are not burnt, nor unjustifiably pulled out and that women, children, the elderly and unoffending priests or monks should not be harmed.”¹⁹⁰ In the Buddhist tradition, there is an in-depth respect and relationship with nature, and ancient Hindu codes of combat otherwise known as the Laws of Manu forbid the use of poisoned arrows, which was also observed by the ancient Greeks and Romans as a customary rule.¹⁹¹

When you are at war, and lay siege to a city for a long time in order to take it, do not destroy its trees by taking the axe to them, for they provide you with food; you shall not cut them down. The trees of the field are not men that you should besiege them. But you may destroy or cut down any trees that you know do not yield food, and use them in siege works against the city that is at war with you until it falls.¹⁹²

International humanitarian law (IHL) in modern times is also referred to as the law of armed conflict or the law of war. As a cornerstone of international

¹⁸⁹ *Deuteronomy* (20:19-29) : [online] <http://www.mechon-mamre.org/p/pt/pt0520.htm>, (retrieved 29 September 2010)

¹⁹⁰ Environmental Law Institute. (1998:3). *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

¹⁹¹ Franck, Thomas M. (2008:723) “*On Proportionality of Countermeasure in International Law*.” The American Journal of International Law. American Society of International Law. Vol. 102, No. 4. pp. 715-767

relations, it is a vital subset of international law as these normative guidelines provide proper instruction on how an individual or collective regime ought to behave during hostilities. Being made by states, it generally reflects their will and consent.¹⁹³ Within environments of war, similar to olden times, a combatant is still forbidden to cause wanton destruction and unnecessary suffering. Created by either treaty or customary law, IHL has hundreds of provisions or *limitations* which pronounce quite the contrary.

There are many individuals that have shaped the legal framework throughout history. Nevertheless, two particular contributors have been pivotal. These men are known as Henry Dunant and Francis Lieber. Both men were deeply affected by wartime experience, and hence, highly motivated to build upon ideas set forth by Jean-Jacques Rousseau in the Social Contract (1762):

War is in no way a relationship of man with man but a relationship between *States*, in which individuals are only enemies by accident, not as men, but as soldiers..." Once they lay down their weapons "they again become mere men." Their lives *must* be spared.¹⁹⁴

Gasser claims that international law is *supranational* and that its basic rules are binding on all States.¹⁹⁵ The purpose of these laws is "to maintain peace, protect the human being in a just order and promote social progress in freedom."¹⁹⁶ In addition, it is a framework intended to provide solutions to some humanitarian problems and also prevent abuse of state power. François Bugnion believes that the "*limitation* of violence is the very essence of *civilization*."¹⁹⁷ Echoing this point the 'progress of civilization' should have the effect of alleviating the

¹⁹² Deuteronomy 20:19-20; Environmental Law Institute. (1998:3). *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

¹⁹³ Houchins, Captain Deborah. (2003:13) "*Extending the Application of the ICJ's July 8, 1996 Advisory Opinion to Environment-Altering Weapons in General: What is the Role of International Environmental Law in Warfare?*" Major Report CI02-924. University of Utah.

¹⁹⁴ Gasser, Hans-Peter.(1993:7) *International Humanitarian Law: An Introduction*. Geneva, Switzerland: ICRC (emphasis mine)

¹⁹⁵ Gasser, Hans-Peter.(1993:7) *International Humanitarian Law: An Introduction*. Geneva, Switzerland: ICRC (emphasis mine)

¹⁹⁶ Gasser, Hans-Peter.(1993:7) *International Humanitarian Law: An Introduction*. Geneva, Switzerland: ICRC

calamities of war.¹⁹⁸ In modern times, this very *progress of civilization* is commonly known as “*development*.”

As a civilizing stepping stone in maritime law, the *Paris Declaration* on 16 April 1856 formally declared that *uncertainty* of laws or duties could lead to serious difficulties or conflict amid international relations. To prevent any confusion or collision it was deemed necessary to create: (i) a uniform doctrine, and (ii) fixed principles.¹⁹⁹

Francis Lieber began setting forth these guidelines on the battlefield in his work, *Instructions for the Government of Armies of the United States in the Field*, 24 April 1863, also known as the *Lieber Code*. It was an effort toward developing a more civilized military demeanor or what he referred to as “virtues adorning a soldier.”²⁰⁰ Not only did his work enshrine some of the first rules of war, but also its formal codification became a military model inspiring and facilitating the development of IHL and other military manuals. Preserved within 157 articles²⁰¹ nearly 150 years ago are some of the most basic *limitations* relating to proper military behavior and prohibitions against the wanton destruction of property not justified by military necessity.

Henry Dunant, during nearly the same period, was troubled from unrelenting visions from the Battlefield of Solferino in 1859. It was his nightmares that led to his published work titled “*Memories of Solferino*” which in return shocked the conscience of European heads of State. Dunant’s humanitarian courage and altruistic spirit also led to the establishment of the 1864, 1906, 1909, 1929, and eventually 1949 Geneva Conventions. His lifework became the main inspiration of IHL, serving society in its role of the relief and protection in wartime.

¹⁹⁷ Bugnion, François. (1988): “*Just wars, wars of aggression and international humanitarian law*.” Geneva, Switzerland: ICRC. (emphasis mine)

¹⁹⁸ *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. . Saint Petersburg, 29 November / 11 December 1868.

¹⁹⁹ *The Paris Declaration Respecting Maritime Law* (1856)

²⁰⁰ *Instructions for the Government of Armies of the United States in the Field* (Lieber Code): 24 April 1863. Article 4.

Honoring his compassionate vision, Dunant was awarded the first Nobel Peace Prize in 1901 together with Frédéric Passy.²⁰²

IHL sets *limitations* upon methods and means of warfare. It also aims to protect persons not or no longer participating in the hostilities in order to prevent unnecessary suffering. In a piecemeal approach in the development of wartime protection, the 1868 *St. Petersburg Declaration* was a notable contribution toward the progress of civilization. It has been revered as the international treaty which set *technical limitations* as it banned inhumane instruments such as “arms, projectiles and material of a nature to cause *unnecessary suffering*.”²⁰³

This international treaty was foreseen as a vital development in IHL. The Commission at that time set forth the standard as “common agreement fixed the technical *limits* at which the necessities of war ought to yield to the requirements of *humanity*.”²⁰⁴ As a basic rule the St. Petersburg Declaration established that “the only *legitimate* object which states should endeavor to accomplish during war is to weaken the military forces of the enemy.”²⁰⁵ The law also states that the employment of arms or weapons which “uselessly aggravate the suffering of disabled men and render their death inevitable – would be contrary to the law of *humanity*.”²⁰⁶ Today, these fundamental laws are a part of the corpus of customary international law (CIL).

In 1880 The Institute of International Law published *The Laws of War on Land* which established more *limitations* on injuring the enemy while attempting to deal with public and private *property*. These added efforts were reinforced by the First Peace Conference of The Hague in 1899 which led to the codification of

²⁰¹ *Instructions for the Government of Armies of the United States in the Field* (Lieber Code): 24 April 1863

²⁰² Nobel Prize.org: [online] http://nobelprize.org/nobel_prizes/peace/laureates/1901/ (retrieved 25 March 2011)

²⁰³ *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. Saint Petersburg, 29 November / 11 December 1868. (emphasis mine)

²⁰⁴ *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. Saint Petersburg, 29 November / 11 December 1868.

²⁰⁵ *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. Saint Petersburg, 29 November / 11 December 1868. (emphasis mine)

Hague (II) with Respect to the Laws and Customs of war on Land entering into force on 4 September, 1900.²⁰⁷ It would become these civilized principles and rules which were carried onward to the Second International Peace Conference in 1907, known as the “Hague Laws.”

Section II Hostilities Article 22 affirms that “the right of belligerents to adopt means of injuring the enemy is not *unlimited*.”²⁰⁸ Article 23 affirms rules of both ancient and modern civilizations as it is forbidden to:

employ *poison* or *poisoned arms*; kill or wound treacherously individuals belonging to the hostile nation or army; employ arms, projectiles, or material of a nature to cause superfluous injury; destroy or seize the enemy's *property*, unless such destruction or seizure be imperatively demanded by the necessities of war.²⁰⁹

Regarding property destruction, during sieges and bombardment it is claimed that all steps must be taken to spare *special objects* provided that they are not used for military purposes. It is important to note the exception whereas the protection of property or special objects may be overruled by *military necessity*. In the event an object or property becomes a legitimate target, it may become subject to attack.

The Hague Laws and *Geneva Laws* are classic examples of international treaty law. In time, these laws became accepted as customary norms. There are a few important points to bear in mind with respect to instruments of international law whether established by treaty or custom. First, *treaty law* is a formal written agreement. It obliges States to act in accordance with specific rules. A majority of states are often required to enter into a treaty ratification process before

²⁰⁶ *Declaration Renouncing the Use, in Time of War, of Explosive Projectiles Under 400 Grammes Weight*. Saint Petersburg, 29 November / 11 December 1868.

²⁰⁷ Yale Law School. The Avalon Project: [online] http://avalon.law.yale.edu/19th_century/hague02.asp, (retrieved 29 September 2010)

²⁰⁸ *Convention with Respect to the Laws and Customs of War on Land (Hague II)* (29 July 1899). Section II. On Hostilities. Chapter 1. On Means of Injuring the Enemy, Sieges, and Bombardments. Article 22 (emphasis mine)

²⁰⁹ *Convention with Respect to the Laws and Customs of War on Land (Hague II)* (29 July 1899). Section II. On Hostilities. Chapter 1. On Means of Injuring the Enemy, Sieges, and Bombardments. Article 23

becoming duty-bound to abide by its laws. Treaty ratification is voluntary and a "state need not enter into a treaty that does not conform to its interests."²¹⁰ Additionally, reservations could be made to modify certain treaty provisions. This means that a state could become exempt from certain provisions while leaving the rest of the treaty intact, which has been referred to as a "line-item veto" rendering such provisions non-binding under international law.²¹¹ In sum, treaty law is legally-binding *only* amid contracting State Parties. States that do not become a signatory and/or ratify a treaty agreement would *not* be duty-bound to comply with its laws – unless of course, those rules became part of customary international law (CIL).

CIL is an unwritten code of international law which has developed over a period of time based upon the general practice of states. When a rule is accepted as customary practice, all states are duty-bound to its terms whether they have become a contracting party to the treaty agreement or not.

Throughout the international community's continuous progress toward civilization, international humanitarian law has historically made developments in an attempt to alleviate unnecessary suffering on the battlefield. Nevertheless, it is premature to suggest that IHL offers a complete framework of protection. As an added measure to fill the gaps of protection a catch-all phrase referred to as the *Marten Clause* was adopted. In an effort to provide enhanced protection, it proposes:

Until a more complete code of the laws of war has been issued, the high contracting parties deem it expedient to declare that, in cases not included in the Regulation adopted by them, the inhabitants and the belligerents remain under the protection and the rule of the principles of the law of nations, as they result from the usages established among civilized peoples, from the laws of humanity, and the dictates of the public conscious.²¹²

²¹⁰ Cole, Wade C. (2005:475). "Sovereignty Relinquished? Explaining Commitment to International Human Rights Covenants, 1966-1999." Stanford University. American Sociological Review Vol. (June:472-495)

²¹¹ Cole, Wade C. (2005:486). "Sovereignty Relinquished? Explaining Commitment to International Human Rights Covenants, 1966-1999." Stanford University. American Sociological Review Vol. (June:472-495)

²¹² *Convention (IV) respecting the Laws and Customs of War on Land and its annex: Regulations concerning the Laws and Customs of War on Land*. The Hague, 18 October 1907, Preamble

Even though rigorous humanitarian efforts were made throughout history, shortly afterward, it was the brutal aftermath of World Wars I and II which once again challenged the notion of civilized peoples, laws of humanity, and dictates of the public conscience. Stricken by a new sequence of traumatic wartime experiences, the international community of states called forth another endeavor to strengthen IHL. In hindsight, certainly – more *limitations* were needed. These deliberations sought to reform and remind individuals or collective regimes how they ought to behave even in periods of armed conflict. Awakened by man's inhumanity, *The Geneva Conventions of August 12 1949* ²¹³ would become the next endeavor at such a codification.

4.2 The Geneva Conventions

As the sinister revelations of the World Wars were unfolding, it was clear that international humanitarian law required further development to meet the needs of *humanity*. Upon detecting various shortcomings of wartime protection, intensive efforts were made to build up its practical purpose in a renowned text referred to as *The Geneva Conventions of August 12 1949* (GC). Considered as the moral and legal backbone pertaining to rules of warfare, enshrined within its pages, the next generations of combatants were provided a set of legal guidelines in order to respect and ensure respect for proper military conduct on the battlefield.

The Geneva Conventions is a text comprised of four treaties. It is the main legal source of wartime protection. This body of international law is also referred to as '*jus in bello*,' law of armed conflict, law of war, or hereinafter, as international humanitarian law (IHL). IHL is not stimulated by thoughts of the just or unjust war. The rules it sets forth are applicable *only* in the event of an armed conflict.

As mentioned earlier, wartime rules are established through treaty or customary law. The main purpose of IHL is to introduce the element of humanity onto the

²¹³ ICRC.(2008) *The Geneva Conventions of August 12 1949*. Geneva, Switzerland

battlefield. Providing combatants with a set of strict rules and principles, it instills a counterbalancing force to the concept of military necessity.

International humanitarian law aspires to “strike a balance” between humanity and military necessity in two basic ways. Firstly, it aims to protect people who do not or no longer take part in the hostilities. And secondly, it sets *limitations* on methods and means of warfare.²¹⁴

Considering that *protection* is IHLs’ overarching aim, when one contemplates protection – what should one anticipate? According to the *Law Dictionary*, the term *protection* implies: “to preserve in safety; to keep intact; to take care of and to keep safe.”²¹⁵ As expected, within environments of war there are a multitude of considerations regarding such aims toward protection; nevertheless, an attempt at its formal codification has been essential toward the progress of civilization.

Through a uniform doctrine and fixed principles, the Geneva Conventions established its legal foundation toward a protection founded on categorical persons, special objects and channels of operational care. Presently the GC is universally ratified, and is considered part of customary international law. In other words, all parties to *any* armed conflict are obliged to abide by its terms, whether they are parties to the treaty or not – this includes State and non-State actors.

In light of its first aim to *protect* the human person who does not or no longer takes part in the hostilities, the GC set forth *categorical persons* that must be respected in wartime. In particular, the First Geneva Convention (GCI) set forth protection for the wounded and sick in armed forces in the field. The Second Geneva Convention (GCII) set forth protection for the wounded, sick and shipwrecked members of armed forces at sea. The Third Geneva Convention (GCIII) set forth protection for prisoners of war. And finally, the Fourth Geneva Convention (GCIV) set forth protection for the civilian population.

In each of the aforesaid four treaties, the categorical persons are granted a *special status*. In recognition of this special status, combatants are obliged to protect and to provide a special *care* toward women, children, elderly and disabled persons in combat. Additionally, medical and religious or spiritual personnel must also be respected and protected.

The Geneva Convention also establishes a means toward the identification of *special objects*. For instance, on the battlefield, places of worship, cultural heritage sites, hospitals, schools, civilian property, dams and dykes as well as other objects are provided a status of special protection. It is forbidden to attack these special objects, *unless* it is deemed an imperative military necessity.

In addition, there are constituents of *channels of care* which are also provided a special status of protection. For instance, medical equipment and supplies, medical personnel, religious or spiritual personnel, war correspondents and methods of transportation to provide care to the wounded and sick, whether on land, air or upon the sea – all must be respected and protected.

In order to combine these systematic elements of persons, objects and channels of care into a sort of “protective package”, and facilitate the overall humanitarian mission, a universal *communication method* was considered necessary. Visually communicating and combining its message of protection, an emblematic distinction of the Red Cross on a white background was created.²¹⁶ During hostilities, this distinctive emblem is utilized for both indicative and protective purposes, and fundamentally aims to offer combatants a means of *identification*. As a result, military commanders are well-informed about particular persons and objects that must be *specifically protected* and therefore, not to become the subject of attack. On the other hand, this protection could be withdrawn *if* it is deemed an imperative military necessity.

²¹⁴ ICRC; *History of International Law*

²¹⁵ Gifis, Steven H. (2003): *Law Dictionary*, Fifth Edition. Barron's Educational Series

²¹⁶ Gasser, Hans-Peter. (1993:8): *International Humanitarian Law: An Introduction*. Geneva, Switzerland: ICRC.

Although the first identification toward protection began with the Red Cross, as of 2005, there were three distinctive emblems publicly recognized to represent the humanitarian endeavors of the ICRC. All three emblems are to be equally respected, otherwise known as the *Red Cross*, *Red Crescent* and *Red Crystal*.



Figure 1: The Red Cross, Red Crescent and Red Crystal

Under IHL, there are basic commitments that aid conflicting parties in this reciprocal relationship of respect and protection. GC Common Article 1 (CA1) states that “The High Contracting Parties undertake to *respect* and to *ensure* respect for the present Convention in *all* circumstances.”²¹⁷ CA1 sets forth a protective tone toward an anticipated military conduct and affirms that states are “*collectively* obliged to assume responsibility for compliance.”²¹⁸

GC Common Article 3 (CA3) is also relevant. This common article has been referred to as a sort of mini-convention as its rules are applicable in *all* armed conflicts, whether it is an international armed conflict (IAC) or a non-international armed conflict (NIAC). CA3 affords a bare minimum of protection to parties of the conflict. Importantly, in connection with this thesis, however, CA3 does *not* offer *protection to the natural environment*.

It is often encouraged that the Geneva Convention could provide some protection for the natural environment in wartime, however, amid roughly 57,000 words –

²¹⁷ ICRC(2008): *The Geneva Conventions of August 12 1949*. Geneva, Switzerland: ICRC.

²¹⁸ Gasser, Hans-Peter(1993:90): *International Humanitarian Law: An Introduction*. Geneva, Switzerland: ICRC. (emphasis mine)

the term ‘*natural environment*’ is never mentioned. Then again, some provisions might be used in an attempt to protect the natural environment *indirectly*.

Case in point, regarding some *indirect* methods of protection for the *natural* environment, Article 53 prohibits:

Any destruction of the Occupying Power of *real* or *personal property* belonging individually or collectively to protected persons, or to the State, or to other public authorities, or to social or cooperative organizations, except where such destruction is rendered absolutely necessary to military operations.²¹⁹

This prohibition on the destruction of *real* or *personal property* may possibly offer protection to the natural environment *indirectly*. Nevertheless, it is unreliable and minimal. It is also important to note that the destruction of property might be overruled by an imperative military necessity.

Within occupied territories, Article 56 offers protection to hospital establishments, medical personnel, public health and hygiene.²²⁰ Yet at this stage in the development of IHL, a fundamental component needed to attain this humanitarian endeavor is strikingly unseen.

Under Article 147, another *indirect* means of protection is provided. This provision lists as a *grave breach* the “extensive destruction and appropriation of property not justified by military necessity and carried out unlawfully and wantonly.”²²¹ In essence, this provision strives to set a *limitation* upon the *extensive destruction of property*, which may also include the natural environment. For that reason, it would provide an indirect measure of protection.

Until 1949, however, it is clear. IHL had advanced in its humanitarian endeavor. It established the identification and protection of categorical persons, special objects and channels of care. Noticeably, the law explicitly protects aspects of the *man-made* environment. It forbids attacks on hospitals, schools, and places of worship,

²¹⁹ ICRC. (2008:174): *The Geneva Conventions of August 12 1949*. Art. 53. Geneva, Switzerland: ICRC.

²²⁰ ICRC. (2008:175): *The Geneva Conventions of August 12 1949*. Art. 53. Geneva, Switzerland: ICRC.

²²¹ ICRC. (2008:211): *The Geneva Conventions of August 12 1949* Art. 147 Geneva, Switzerland: ICRC.

cultural heritage, museums, and more. Strikingly however, the Geneva Convention does not mention or directly protect one of the most *vital links* to sustain human wellbeing – the *natural* environment. Actually, it took three more decades and the fright of *ecocide* to spark the awareness toward more protection of the natural environment in times of armed conflict. The Stockholm Declaration calls to mind:

In the long and tortuous evolution of the human race on this planet a stage has been reached when, through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale. *Both* aspects of man's environment, the *natural* and *man-made*, are essential to his well-being and to the enjoyment of basic human rights and to the right of life itself.²²²

4.3 Protocol I Additional to the Geneva Conventions

With the adoption of 1977 Additional Protocol I (API) the *natural* environment at last hit the radar. Upon ratification and its entry into force in 1978, High Contracting Parties (HCP) now had supplementary provisions toward enhanced protection in wartime. Making its long-awaited debut, the *natural* environment was being formally acknowledged.

API is a main legal source clearly aiming to protect the *natural* environment in wartime. Although some scholars uphold that IHL has entered into a “*greening*” stage and consider its expansion innovative, its legal *adequacy* remains open to question. Even so, other than merely *indirect* methods aiming to protect the natural environment during hostilities, *direct* methods are now established from both anthropocentric and biocentric viewpoints.

As mentioned earlier, indirect methods imply that the natural environment may be protected, however it is not expressly stated. And with respect to direct methods of protection, the term natural environment is expressly stated and a rule is being provided toward its protection.

²²² United Nations Conference on the Human Environment (1972): *The Stockholm Declaration* (emphasis mine)

Nevertheless there are some valid concerns regarding the legal *adequacy of Additional Protocol I*. For instance, API does not apply to *all* armed conflict – it applies to hostilities of an international character only. As an instrument of international treaty law, states must be party to the Protocol in order to become duty-bound. Presently, API has 170 States Parties. In other words, the majority of UN Member States are duty-bound with its rules set forth. A valid concern, on the other hand, is that some of the world's most military significant states, such as Indonesia, Israel and the United States are not party,²²³ as of yet. Clearly the adherence gap could spawn an arousal of tension amid international relations and create complications for coalition forces, as they may be bound by different rules of warfare. In short, these elements of power imbalance, uncertainty and non-compliance could present a problematic affair which in turn may present another *vital link* and concern for sustainable development. As Peter Levine reveals with a profound insight:

Our past encounters with one another have generated a legacy of *fear, separation, prejudice, and hostility*. When people are traumatized by war, the implications are staggering...trauma has a frightening potential to be re-enacted in the form of violence. Murder, poverty, homelessness, child abuse, racial and religious hatred and persecution is all related to war. There is no avoiding the traumatic aftermath of war; it reaches into every segment of a society.²²⁴

Attempting to resolve this concern, the *universal ratification* of API has been urged. In addition, an extension of its application of environmental provisions to a non-international armed conflict may also provide an enhanced protection. These aforesaid ideas have been previously suggested, however, ultimately rejected by negotiating parties of the Protocols Additional. Yet, remain possible suggestions toward enhanced protection of the *natural* environment in wartime.

Reaffirming basic *limitations*, the law states:

²²³ Hulme, Karen. Harvard Online (2010): *The Protection of the Environment in the event of armed conflict: Military or Civilian Asset*: 15 July.

²²⁴ Levine, Peter (1977): *Waking the tiger*

In any armed conflict, the right of the parties to the conflict to choose methods or means of warfare is not *unlimited*.²²⁵

It is *prohibited* to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or *unnecessary suffering*.²²⁶

These basic laws are accepted as customary law, and therefore, applicable to *all* state and non-state actors in both an international and non-international armed conflict.

API has 102 legal provisions in total. Within this section, some of these rules, providing both *direct* and *indirect* means will be closely analyzed. First, in an effort toward direct protection, Article 35 (3) is a key provision. It aims to protect the natural environment by setting forth *limitations* on methods and means of warfare:

It is prohibited to employ methods or means of warfare which are intended, or may be expected to cause widespread, long-term and severe damage to the *natural* environment.”²²⁷

According to Dinstein, the *natural environment* was *not* defined under Additional Protocol I.²²⁸ The ICRC had advised that “it should be understood in its widest sense to cover the *biological* environment in which a population is living.”²²⁹ For example, it should consider the fauna and flora and other climatic elements. Nonetheless, the notion of *how* to properly identify what the natural environment actually ‘*is*’ seems a common thread of concern for IHL, still open to debate.

Dinstein offers another relevant point. The *intended* or *may be expected* element sets forth a formula accentuating premeditation and foreseeability rather than results. Therefore, any damages pertaining to the *natural* environment and hence,

²²⁵ ICRC (1977:27): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 35(1). (emphasis mine)

²²⁶ ICRC (1977:27): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 35(2). (emphasis mine)

²²⁷ ICRC (1977:27): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 35 (3)

²²⁸ Dinstein, Yoram (2004:184): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

²²⁹ Dinstein, Yoram (2004:184): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press. (emphasis mine)

related consequences which might prejudice the health or survival of the population *if* neither *intended* nor *expected* would not be considered a breach of the Protocol.²³⁰ Unintentional “collateral damage” to the natural environment is not prohibited under this provision. Taking into account this legal interpretation, another concern regarding effective implementation of the law arises. Does military command have ecological information during targeting decisions in order to conduct their operations in accordance with international humanitarian law?

Taking into account that the main objective is to set strict *limitations* on the destruction of the *natural* environment, it remains to reconsider the legal threshold of harm, commonly referred to as “*widespread, long-term and severe*” damage. The WLS threshold of harm is normally considered as *too vague* and *too-high* to offer any meaningful protection. Dinstein claims that “No action in warfare is allowed to reach this threshold. Once these three criteria are satisfied, the action will be in breach of the Protocol – even if it is ‘clearly proportional’.”²³¹ Seemingly dependable, however, there are disparities as to what this widespread, long-term and severe threshold of harm actually *is*.

The main dilemma with the threshold is *ambiguity*. It is argued presently that under API there is no clear idea or consensus as to what these terms suggest. In fact, two of the three criteria, *widespread* and *severe* are undefined. It has been suggested that widespread likely means “several hundred square kilometers” as defined in the ENMOD Convention. However, Additional Protocol I is not to be considered together with other treaties.

Severe might be interpreted “some human impact, but not pure environmental damage” according to the Travaux Préparatoires²³² or that which “prejudices the

²³⁰ Dinstein, Yoram (2004:183): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States. Cambridge University Press.

²³¹ Dinstein, Yoram (2004:186): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States. Cambridge University Press.

²³² Hulme, Karen. Harvard Online (2010): *The Protection of the Environment in the event of armed conflict: Military or Civilian Asset*: 15 July.

health or survival of the population.”²³³ Nevertheless, a formal definition has not been established, as of yet.

Under API there is consensus regarding the term *long-term*. It is understood that damage to the *natural* environment could last for *decades*, possibly twenty to thirty years. This length of time is generally considered as “*too-long*.”

The terminological vagueness of these terms is foreseen as unacceptable. Jensen also believes that the biocentric approach to protect the *natural* environment does not offer enough clarity to provide the necessary deterrence or enforcement.²³⁴ Dieter Fleck affirms that “the terms used in these different instruments do not provide clear definitions as to *time* and *space*.”²³⁵ As such it seems that there has been an attempt to set a *limitation* on the destruction of the natural environment, yet the extent of the damage permissible remains unclear.

...first settle on the *meaning of terms*.... Once they have done this correctly, all they have to do further is to calculate the consequences of these definitions.²³⁶

Dinstein maintains that “As the condition of the environmental damage is *long-term*, its effects are likely to outlast the war and then any *distinction* between the civilians and combatants becomes anachronistic.”²³⁷ Therefore it seems a *vital link* that the terms *widespread*, *long-term* and *severe* need proper clarification and consensus in order to increase the effectiveness of IHL and moreover, strengthen the foundation which upholds sustainable development.

Another threshold of harm concern is the conjunctive use of “*and*” as opposed to disjunctive use of “*or*” as expressed within the ENMOD Convention. This implies that *all* three criteria *widespread*, *long-term* and *severe* must be

²³³ Jensen, Eric T. (2005:172): *The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*. Vanderbilt Journal of Transnational Law. Vol.38:145

²³⁴ Jensen, Eric T. (2005:171): *The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*. Vanderbilt Journal of Transnational Law. Vol.38:145

²³⁵ ICRC (2010): *Course on International Humanitarian Law 27th Edition*. ICRC. Warsaw, Poland. 29 June-9 July (emphasis mine)

²³⁶ Hobbes, Thomas (1994:ix): *Leviathan*, with selected variants from the Latin edition of 1668. Edited with Introduction by Edwin Curley. Canada. Hackett Publishing Company, Inc. (emphasis mine)

established in order to constitute a breach. Hulme claims that since the “three terms are cumulative; it makes it that much harder to pass the threshold and hence, imposes less of a prohibition on military action.”²³⁸ Hulme adds that “most IHL lawyers peg the threshold as being *too-high* to matter.”²³⁹

Adding perspective to this review, *The Operational Law Handbook* put forward that “there is little doubt that the majority of carnage caused during World Wars I and II (with possible exception of the two nuclear devices exploded over Japan) would not have met this threshold requirement.”²⁴⁰ This statement likely suggests that the protection of the natural environment is *inadequate*. Still, another method of *direct* protection stands to be evaluated.

Article 55 (1) states:

Care shall be taken in warfare to protect the *natural* environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population.²⁴¹

This provision is viewed as an anthropocentric approach toward environmental protection. Some interesting views surround its legal interpretation. Firstly, Jensen suggests that the issue herein relates to the *effect* an act has upon the environment, *not* the actor’s intention or the means or method used.²⁴² Dinstein claims that it is seriously contended if this provision breaks new ground as compared to Article 35 (3), because it *limits* only environmental damage which prejudices the health or survival of the population. However, when the population’s health is prejudiced – the ban is applicable. He also points out that it

²³⁷ Dinstein, Yoram (2004:183): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

²³⁸ Hulme, Karen. Harvard Online (2010): *The Protection of the Environment in the event of armed conflict: Military or Civilian Asset*: 15 July.

²³⁹ Hulme, Karen. Harvard Online (2010): *The Protection of the Environment in the event of armed conflict: Military or civilian Asset*: 15 July.

²⁴⁰ Luce, John R., Lieutenant Colonel (2000:7): “Protection of the Environment During War: The Need for a Clear Department of Defense Policy.” Carlisle Barracks, PA: U.S. Army War College, 17013-5050.

²⁴¹ ICRC (1977:38): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 55(1)

is interesting how the term *warfare* has been retained as opposed to IAC, as suggested by framers of the Protocol.²⁴³ Moreover, Additional Protocol I “did *not* expressly designate the natural environment as a *civilian object*.”²⁴⁴ Other scholars placed emphasis on the exclusion of naval and air warfare; however, it seemed clear that the protection of the natural environment applies to *all* types of warfare.²⁴⁵

Hulme believes that Article 55 (1) is the “hidden gem of IHL provisions.”²⁴⁶ She claims that although it contains the same threshold of harm, military command is given a sort of stewardship role as combatants must take “*care*” to protect the natural environment from harm and exercise a general assessment when proposing attacks that not only harm the environment, but to what degree.²⁴⁷

Additionally it is forbidden to attack the natural environment by way of reprisals,²⁴⁸ in Article 55 (2). This provision is claimed to offer significant protection, when respected.

Articles 35(3) and 55 both express a *direct* means of protection to the *natural* environment. Be that as it may, Adam Roberts has stated that controversy remains about the “content, status and utility”²⁴⁹ of these environmental provisions. The ICRC also reported that although the International Court of Justice (ICJ) expressly states that these provisions “embody a general obligation to protect the natural environment against, *widespread, long-term and severe*

²⁴² Jensen, Eric T. (2005:162): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145

²⁴³ Dinstein, Yoram (2004:182): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

²⁴⁴ Dinstein, Yoram (2004:184): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

²⁴⁵ Dinstein, Yoram (2004:184): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

²⁴⁶ Hulme, Karen. (2010): *The Protection of the Environment in the event of armed conflict: Military or Civilian Asset*. 15 July: Harvard Online.

²⁴⁷ Hulme, Karen. (2010): *The Protection of the Environment in the event of armed conflict: Military or civilian Asset*. 15 July: Harvard Online.

²⁴⁸ ICRC (1977:39): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 55(2)

²⁴⁹ Roberts, Adam. (2002:59): *The Law of War and Environmental Damage. The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

environmental damage,” it should have stressed “to go beyond the traditional requirement of military necessity and impose an absolute ban on severe environmental damage.”²⁵⁰ It is still argued if these provisions are considered customary international law. For a variety of reasons, as previously discussed, these *direct* methods aiming to protect the *natural* environment in wartime seem *inadequate*.

API also has *indirect* means of protection. Foremost, the principle of *precaution* is a basic condition of IHL to be observed in several ways. One of the most suitable obligations is regarding new methods and means of warfare.

Article 36 states:

In the study, development, acquisition or adoption of a new weapon, means or method of warfare, a High Contracting Party is under an obligation to determine whether its employment would in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party.²⁵¹

Another *indirect* means is expressed through the *special status* directed toward the civilian population and civilian objects which are to be respected and protected during hostilities. Article 48 states:

In order to ensure respect for and protection of the civilian population and *civilian objects* the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations *only* against military objectives.²⁵²

Is the natural environment a *civilian object*? The civilian object status is likely to advance protection for the *natural* environment. Hulme maintains that the natural environment *is* usually considered a civilian object. Yet, she reinforces that *if* the natural environment meets the requirement of a *military objective* – it is open to

²⁵⁰ ICRC: “*Environmental damage in times of armed conflict - not "really" a matter of criminal responsibility?*” Geneva, Switzerland: ICRC.

²⁵¹ ICRC (1977:27-8): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 36

²⁵² ICRC (1977:34): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 48 (emphasis mine)

attack. The problem then becomes the threshold of harm and aspects of the proportionality calculation.²⁵³

Jensen adds that assuming the natural environment is a civilian object, it is inherently unlawful to target *unless* deemed a military necessity. However, military command must demonstrate that the environment targeted meets the “nature, location, purpose, or use test.”²⁵⁴ As stated earlier, Dinstein points out that the natural environment was *not* expressly designated as a civilian object.²⁵⁵ It seems this view is still open to discussion.

In view of the fact that *civilian objects* could turn into *military objectives*, and thus, lawfully targeted, it seems important to understand how this protective shift occurs. Article 52 (2) defines a military objective in the following terms:

Military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.²⁵⁶

Targets must meet the criteria of *nature, location, purpose* or *use* to become a lawful military objective. Jensen adds that by its *nature*, the environment is *not* a military objective and could *not* be considered a dual-use target serving military and civilian purposes. He claims that there is nothing intrinsic to the natural environment that would make it such.²⁵⁷ In its place, he draws attention to objects such as weapons, fortifications, transports, equipment and similar to items that are military objectives by their *nature*.

Another analysis has been recommended with regard to *location*. Based on its location, an attack upon civilian objects such as, bridges or other constructions

²⁵³ Hulme, Karen. (2010): *The Protection of the Environment in the event of armed conflict: Military or civilian Asset*: July 15. Harvard Online.

²⁵⁴ Jensen, Eric T. (2005:170): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” Vanderbilt Journal of Transnational Law. Vol.38:145

²⁵⁵ Dinstein, Yoram (2004:184): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press. (See. Art. 55 (1))

²⁵⁶ ICRC (1977:37): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 52(2)

²⁵⁷ Jensen, Eric T. (2005:170): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” Vanderbilt Journal of Transnational Law. Vol.38:145

could make an effective contribution to military action.²⁵⁸ Such attacks could also damage the *natural* environment; however, it may be considered permissible harm if it is in accordance with other wartime rules and principles. In addition, *purpose* is said to be related to “the intended future use of an object.”²⁵⁹ Lastly there, is the concept of *use*. If the enemy “*uses*” the natural environment as a means of cover or concealment, it can turn into a military objective and hence, be lawfully targeted, as previously described in the case of Vietnam.

Another line of defense in the protection of the natural environment is based on imposing the limitation on which *indiscriminate* attacks are prohibited.²⁶⁰

Unlawful attacks are those which:

- a) are *not* directed at a specific military objective
- b) employ a method or means of combat which *cannot be directed* at a specific military objective; or
- c) employ a method or means of combat the *effects* of which *cannot be limited* as required by this Protocol²⁶¹

Furthermore, if the attack “*may be expected*” to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated,”²⁶² it is unlawful. It seems important at this juncture to reflect upon the various ways in which the *natural* environment may be vitally linked to these aforesaid losses, injuries and damages associated with the *specifically protected* civilian statuses.

Another important factor concerning modern warfare is the increasing suspicion which surrounds the *distinction* principle of the protected civilian status. Accordingly, the element of *uncertainty* is also addressed for combatants under

²⁵⁸ Jensen, Eric T. (2005:170): *The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*. Vanderbilt Journal of Transnational Law. Vol.38:145

²⁵⁹ Jensen, Eric T. (2005:170): *The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*. Vanderbilt Journal of Transnational Law. Vol.38:145

²⁶⁰ ICRC (1977:36): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 51

²⁶¹ ICRC (1977:36): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 51(4) (emphasis mine)

²⁶² ICRC (1977:36): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 51(5,b)

Additional Protocol I whereas in cases of doubt, objects shall be considered as *civilian objects* and *not* become the object of attack.²⁶³

The natural environment is also protected as Article 54 prohibits “...to attack, destroy, remove, or render useless objects indispensable to the survival of the civilian population, such as *foodstuffs, agricultural areas* for the production of foodstuffs, *crops, livestock, drinking water installations* and supplies and *irrigation works*...”²⁶⁴ These objects are *not* to be made the object of reprisals. Thus far, this provision has not been contested. Regarding these vital basic necessities such as food and water, API states:

...in no event shall actions against these objects be taken which may be expected to leave the civilian population with such inadequate food or water as to cause its starvation or force its movement.²⁶⁵

Another noteworthy *indirect* method could also be considered a *vital link* between IHL and SD. It aims to protect works and installations containing dangerous forces, and therefore, it protects the surrounding natural environment. The provision indicates *specifically protected objects* of importance to the civilian population which also contain a potential power to unleash unlawful forms of destruction. These specifically protected objects are marked with a distinctive emblem, as ‘three bright orange circles’ facilitate the location, identification and protection.²⁶⁶



Fig. 2: Distinctive emblem for the protection of works and installations containing dangerous forces

²⁶³ ICRC (1977): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 36, 52

²⁶⁴ ICRC (1977:38): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 54(2) (emphasis mine)

²⁶⁵ ICRC (1977:38): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 54(3,b)

²⁶⁶ ICRC (1977:40): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 56(4,7)

Article 56 states:

Works or installations containing dangerous forces, namely *dams, dykes and nuclear electrical engineering stations*, shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequent severe losses among the civilian population. Other military objectives located at or in the vicinity of these works or installations shall not be made the object of attack if such attack may cause the release of dangerous forces from the works or installations and consequent severe losses among the civilian population.²⁶⁷

Roberts states, however, that these objects are *not* immune from attack.²⁶⁸ For instance, the special protection afforded could cease *if* the object is used for other than its normal function, or used in regular, significant and direct support of military operations, or when it is the only feasible way to terminate such support.²⁶⁹ If respected, this provision could offer significant protection for the natural environment. However, military necessity could once again override the protection desired. These objects are *not* permitted to become the object of reprisals.

As mentioned earlier, IHL requires that *precaution* is taken during military operations. Article 57(1) states that within the conduct of military operations a *constant care* shall be provided to spare the civilian population, civilians and *civilian objects*. Hulme emphasizes that this *does* include the natural environment.²⁷⁰ In addition, precautions must be taken while selecting methods and means of warfare in order to avoid or minimize incidental loss of life, injury or damage, and for that reason, combatants must:

Do everything feasible to verify that the objectives to be attacked are neither civilians nor civilian objects and are not subject to *special protection* but are military objectives.²⁷¹

²⁶⁷ ICRC (1977:39): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 56(1)

²⁶⁸ Roberts, Adam. (2002:61): *The Law of War and Environmental Damage. The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom: Cambridge University Press.

²⁶⁹ ICRC (1977:39): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 56(2)

²⁷⁰ Hulme, Karen. (2010): *The Protection of the Environment in the event of armed conflict: Military or civilian Asser*. 15 July. Harvard Online.

²⁷¹ ICRC (1977:40): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 57(2,a,i) (emphasis mine)

Without a doubt, API has indentified the *natural* environment as a separate matter of concern upon the battlefield. Protection is sought-after through both *direct* and *indirect* means. Some scholars argue that the legal framework of IHL is adequate, though a wider adherence and compliance remains an issue.

By contrast, others scholars argue that the legal framework of IHL is inadequate. There is claimed to be a clear lack in understandable rules as well as verification and enforcement mechanisms. The ICRC admits that Additional Protocol I does not cover all cases of environmental damage. It is recommended therefore that former conventional and customary rules of the 1907 Hague Regulations and 1949 Geneva Conventions continue to offer significant environmental protection. Be that as it may, the evidence revealed of past environmental damage in the collective cases previously reviewed would be the current representation of the permissible threshold of harm. Is it a degree of acceptable destruction in the view of the international community of states?

Amid the pendulum swing of these divergent views and critical environmental concerns mounting, an attempt was made toward the further development of IHL. A Fifth Geneva Convention has been recommended to contend with increasing protection for the *natural* environment in wartime – yet it was a step that the international community of states was not willing to take, at that time. *Our Common Future* draws attention to key concerns respecting the legal means toward approaching this indispensable form of protection to realize sustainable development:

National and international law has traditionally lagged behind events. Today, legal regimes are being rapidly outdistanced by the accelerating pace and expanding scale of impacts on the environmental base of development. Human laws must be reformulated to keep human activities in harmony with the unchanging and universal laws of nature.²⁷²

²⁷² World Commission on Environment and Development (WCED 1987:330): *Our Common Future*. Oxford: Oxford University Press.

4.4 Protocol II Additional of 1977 to the Geneva Conventions

Additional Protocol II of 1977 (APII) is the applicable treaty law in the event of an internal or non-international armed conflict (NIAC). It is important to mention that APII does *not* include a direct method of protection for the natural environment. It offers only an *indirect* method of protection and as formerly mentioned, it is applicable to the states which have ratified the treaty.

APII has strict requirements that need to be met prior to its legal application. For example, the conflict must be between a State Party and dissident group or other organized armed group (OAG). The OAG must control a significant part of the state territory, must be under a responsible military command and must be able to carry out “sustained and concerted military actions” to implement the Protocol. Once these requirements have been satisfied, APII and Common Article 3 (CA3) shall apply cumulatively.

With limited means of protection for the *natural* environment in an internal conflict, this could present some real concerns for sustainable development. It is commonly recognized that organized armed groups have been significant contributors toward the unsustainable exploitation of various natural resources, for example, timber, semi-precious stones and other high-valued items.

Under Additional Protocol II, the natural environment is protected *indirectly*, and these provisions set forth are basically a reiteration of Additional Protocol I. The most commonly cited provisions are Article 14, which addresses the protection of objects indispensable to the survival of the civilian population, and Article 15 which addresses the protection of works and installations containing dangerous forces, for example, nuclear engineering stations.

As previously stated, the *special protection* status of a civilian object might offer an indirect means of protection toward the natural environment; however, this

protection may cease. As a result, these once protected civilian objects could become a legitimate military objective, and thus, become open to attack.

Common Article 3 provides a bare minimum of applicable rules during hostilities of an internal character.²⁷³ Still, there is *no* protection being provided to the *natural* environment in such incidents. In section I (a), basic rules are outlined whereas “violence to *life* and person, in particular, murder of *all* kinds, mutilation, cruel treatment and torture is forbidden;” however, it does not make any explicit connection that the protection of the natural environment is a *vital link* with respect toward these other forms of violence to *life*.

In view of that, it is important to rethink how an armed conflict of a non-international or internal character, especially, those not bound by Additional Protocol II might become enhanced to create a more meaningful protection for the natural environment. In IHLs current legal position, the natural environment remains considerably vulnerable during periods of hostilities. Therefore, it is my observation that the protection of the *natural* environment in a NIAC context is virtually non-existent, and hence, deemed *inadequate*.

4.5 Principles in Armed Conflict

In the event of an armed conflict, international humanitarian law is also upheld through a set of legal principles which must be strictly observed between the conflicting parties. While in force, the proper applications of such principles aim to establish a disciplined military conduct, as well as respect and reciprocity upon the battlefield.

In particular, these wartime legal principles are referred to as: *military necessity*, *distinction*, *proportionality* and *humanity*. Each principle strengthens the legal framework of IHL as it requires that combatants respect and ensure respect for

²⁷³ ICRC.(2008:24): The Geneva Conventions of August 12 1949. Geneva, Switzerland. ICRC

strict *limitations* upon wartime destruction. All of the aforesaid principles are considered as part of customary international law. Thus, these principles are applicable in the event of an armed conflict, whether it is of an international or non-international character, and must be observed by state and non-state actors.

In IHL, the *military necessity* principle has an important function. It is an obligation imposed upon the military command to minimize harm to both the civilian population and its property. It achieves this limitation on destruction through a counterbalance of the *humanity* principle. Although military commanders must consider destruction of the *natural* environment, some argue that the natural environment will *not be adequately* protected because of this military necessity doctrine.²⁷⁴ Jensen adds that “while a number of principles relate to protection of the environment during warfare, they are all subordinated to the principle of military necessity.”²⁷⁵ However, it is important to note that “military necessity is not a license for unbridled destruction.”²⁷⁶

Lieber had mentioned that military necessity is “understood by modern civilized nations as consisting of those measures which are indispensable for securing the ends of war, and which are lawful according to the modern law and usages of war.”²⁷⁷ He also professed the military necessity principle as “doing what is necessary to achieve war aims.”²⁷⁸ Yet nowadays, such basic considerations must incorporate assessment respecting the *natural* environment. Conversely, although the military necessity principle is intended to counterbalance other fundamental principles such as *proportionality* and *humanity*, it seems evident that military necessity often takes precedence. Susan Chamorro put emphasis on:

²⁷⁴ Jensen, Eric T. (2005:177): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145

²⁷⁵ Jensen, Eric T. (2005:177): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” *Vanderbilt Journal of Transnational Law*. Vol.38:145

²⁷⁶ Ruiz-Roque, Orlando (1995:7): “*The Laws of Armed Conflict and Environmental Protection: Striking a Balance. International Law at the End of the Century*.” DTIC.

²⁷⁷ Kaszuba, Karl A. Lt. Col, USAF. (1997): “*Military Technology: Has it Changed the Rules of Warfare*.” Air War College. Air University. Maxwell Air Force Base.

²⁷⁸ Verri, Pietro (1992): *The Dictionary of the International Law of Armed Conflict*. Geneva, Switzerland. ICRC.

The notion of military necessity, referred to in the ICJ opinion must be changed significantly or understood differently. A perceived lack of objective standards in the application of this principle is one of the main obstacles to environmental protection in armed conflict. It has been stated that principle of state responsibility and the precautionary principle would be a starting point.²⁷⁹

Military necessity is based on facts at the moment a military decision is taken. Within targeting processes, the general view is that “it is likely that a commander would not be expected to sacrifice a soldier to save a tree.”²⁸⁰ Although most would agree with this clear-cut decision, there remain imperative ecological considerations that will need to be taken in perhaps more complex situations. In light of such, Professor Richard A. Falk claims:

To be lawful, weapons and tactics involving the use of force must be reasonably necessary to the attainment of their military objective. No superfluous or excessive application of force is lawful, even if the damage done is confined to the environment, thereby sparing people and property.²⁸¹

The *distinction* principle is another vital consideration. It requires that combatants within the targeting process must at all times make a distinction between *civilian objects* and military objectives. Concerning weapon selection and tactic used, this distinction must also be made. Under assumption that the *natural* environment is viewed as a *civilian object*, it would be granted special protection and therefore, added consideration prior to attack, if deemed a military necessity. The expected military advantage *must* outweigh the collateral damage to civilians and civilian objects. As a general rule, the distinction principle aims to protect the civilian population and civilian objects, as an attack without justifiable military necessity is *unlawful*. The law plainly states:

In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at *all times distinguish* between the civilian population and combatants and between civilian objects and military objectives and

²⁷⁹ Chamorro, Susan P. and Hammond, Edward. (2001): “Addressing Environmental Modification in Post-Cold War Conflict. *The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements.*” Washington, D.C. USA: The Edmonds Institute.

²⁸⁰ Jensen, Eric T. (2005:177) “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict.*” Vanderbilt Journal of Transnational Law. Vol.38:145

²⁸¹ See Falk in Ruiz-Roque, Orlando. (1995:21): *The Laws of Armed Conflict and Environmental Protection: Striking a Balance. International Law at the End of the Century.* DTIC.

accordingly shall direct their operations *only* against military objectives.²⁸²

In the event military command and combatants make the necessary distinction, once military objectives are chosen, the *proportionality* principle has a vital role in the protection of the natural environment. When respected, the proportionality principle prohibits military action which is *not* in direct proportion to the threat perceived by opposing parties. For that reason, the application of proportionality principle has the potential to halt excessive destructive force, prevent conflict escalation and provide considerable protection.

Thomas Franck claims that the “Mainstream of international proportionality discourse is encountered where one party has taken an action thought to be unlawful by another and that second party has resorted to counters...proportionality assess the lawfulness of the countermeasures.”²⁸³ Formulaically he also suggests that “A has done (or threatens to do) X to B, and B responds by doing Y to A. The issue then becomes...whether countermeasure Y is equivalent (i.e proportionate) to X.”²⁸⁴

Seemingly a clear-cut formula, *proportionality* is not so easily applied in practice. One reason for the difficulty in its application is uncertainties and disparities in *values*. These often diverse and contradictory viewpoints of *what* is perceived as *valuable* by parties to the conflict can sometimes tip the scale of desirable equivalences. Taking into consideration finite natural resources, indeed there are aspects of the natural world that are increasingly considered priceless. For example, oil, water, and timber are a few high-valued resources. Although the principle of proportionality provides some challenge in its formal application, it has been mentioned that because of its restraining effects and credibility in

²⁸² ICRC (1977:34-97): *Protocols Additional to the Geneva Conventions of 12 August 1949*, API Art. 48; APII Art. 13. Geneva, Switzerland: ICRC. (*emphasis mine*)

²⁸³ Franck, Thomas M. (2008:715): “*On Proportionality of Countermeasure in International Law*.” The American Journal of International Law. American Society of International Law. Vol. 102, No. 4. pp. 715-767

²⁸⁴ Franck, Thomas M. (2008:715): “*On Proportionality of Countermeasure in International Law*.” The American Journal of International Law. American Society of International Law. Vol. 102, No. 4. pp. 715-767

decision-making processes, proportionality has “achieved currency” and... is a tool that seems to work.²⁸⁵

Dinstein adds that to be in accordance with proportionality, “an attack on a military objective *must* be desisted from if the effect on the *environment* outweighs the value of the military objective.”²⁸⁶ This viewpoint has added support through various official statements. NATO claims, that during its bombing campaign and targeting decisions against the Federal Republic of Yugoslavia that “all possible collateral damage, be it *environmental*, human or to the civilian infrastructures” were taken into account.²⁸⁷

It is clear that states are expected to take environmental considerations into account when assessing what is *necessary* and *proportionate* in the pursuit of legitimate military objectives. In general, *proportionality* is a *vital link* in the protection of the *natural* environment. Nevertheless, one question still remains. How does military command evaluate *ecological* considerations and possible collateral damage to appropriately execute a ‘proportionality test’? The ICRC submits:

Proportionality seeks to balance humanitarian requirements with the necessities of war. The prohibition against ‘*disproportionate attack*’ stems from the principle of proportionality and is defined by API as an attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated. Therefore, the rule prohibiting disproportionate attacks *requires* that the extent of possible collateral damage *be assessed before launching an attack*. When the civilian losses and damages that are *foreseeable* are out of proportion with the expected military advantage, the interests of the civilian population should always prevail. After all, IHL requires that care be taken constantly to spare civilians and civilian objects and it forbids attacking parties to inflict any injury or damage that can reasonably be avoided.”²⁸⁸

²⁸⁵ Franck, Thomas M. (2008:718): “*On Proportionality of Countermeasure in International Law*.” The American Journal of International Law. American Society of International Law. Vol. 102, No. 4. pp. 715-767

²⁸⁶ Dinstein, Yoram (2004:177): “*The Conduct of Hostilities under the Law of International Armed Conflict*.” United States: Cambridge University Press. (emphasis mine)

²⁸⁷ ICRC (2005:146): *Customary International Humanitarian Law, Volume: Rules*. Cambridge University Press. (emphasis mine)

²⁸⁸ ICRC. (2009:13): *Exploring International Humanitarian Law. IHL Guide - A legal manual for EHL teachers*. Geneva, Switzerland: ICRC. (emphasis mine)

Last but not least, the *humanity* principle aims to prevent and alleviate *unnecessary suffering*. The vital essence of the humanity principle in the pursuit of SD is clear. As a countermeasure to the principle of military necessity, this principle has a long-standing role in wartime ethics. The humanity principle *requires* use of minimal force to achieve legitimate military objectives. It forbids methods and means of warfare which may cause superfluous injury or unnecessary suffering. Until now, it is understood that unnecessary suffering refers to the infliction of injuries or suffering *beyond* what is required to achieve the military aim. Although there is no legal concept put forward to concretize *unnecessary suffering*, it has been stated that the humanitarian disadvantages should not outweigh the military advantages. Professor Falk formulates the principle as follows:

To be lawful, no weapon or tactic can be validly employed if it causes unnecessary suffering to its victims, whether this is by way prolonged or painful death or is in a form calculated to cause severe fright or terror. Accordingly, weapons and tactic that spread poison or disease or do genetic damage are generally illegal per se, as they inflict unacceptable forms of pain, damage, death and fear; all forms of ecological disruption would appear to fall within the sway of this overall prohibition.²⁸⁹

In order to complete the necessary means of protection under IHL, it seems that the *natural* environment cannot possibly be overlooked respecting the *humanity* principle. This interlocked relationship necessitates a keen awareness and means for suitable calculation respecting this vital relationship between man and nature – as a *holistic* unit. Otherwise, how can legal principles in wartime become effectively implemented? Simply put, I would argue – they cannot be.

Long ago, Liebler made an interesting discovery. Upon analyzing the authentic text in French, he believes that perhaps some elements of protection were lost in translation. His rationale is as follows:

The words "*propres a causer des maux superflus*" are more accurately translated as "a nature to cause superfluous injury." The significance of this wording for present purposes is that the word "injury" is not limited to personal harm. It includes property damage, environmental damage, or damage to any "thing" as indicated by the following definition of "injury" in Webster's Third New International Dictionary.

²⁸⁹ See Falk in Ruiz-Roque, Orlando. (1995:7): *The Laws of Armed Conflict and Environmental Protection: Striking a Balance. International Law at the End of the Century*. DTIC.

“INJURY...the act or result of inflicting on a person or thing something that causes loss, pain, distress, or impairment.”²⁹⁰

All else considered, it is important to note that these legal principles in armed conflict have an elastic quality. In order to take hold of what actual *protection* could be offered, it has been advised to be familiar with the dynamic quality that each principle puts forth by viewing them operationally and ask – “what is it they achieve in practice?”²⁹¹

Overall, *if* respected, each of these aforesaid legal principles has a vital function toward the protection of the *natural* environment. Similar to a muscle, it has been said that the more these principles are exercised in wartime, based upon balanced targeting decisions and practical secondary opinions, the stronger their positions will become understood within the legal framework of IHL.

²⁹⁰ Ruiz-Roque, Orlando. (1995:19): *The Laws of Armed Conflict and Environmental Protection: Striking a Balance. International Law at the End of the Century*. DTIC.

²⁹¹ Franck, Thomas M. (2008:717): “*On Proportionality of Countermeasure in International Law*.” *The American Journal of International Law*. American Society of International Law. Vol. 102, No. 4. pp. 715-767

4.6 Customary International Law and the Natural Environment

Customary international law (CIL) is an unwritten body of law which develops over a period time based upon the general practice of states. Dinstein claims that it crystallizes with evidence of a general practice accepted as law. Once a rule is accepted as customary, the rule becomes a formal obligation which must be observed and respected by all state and non-state actors.

In an effort to strengthen the current position of customary law in the event of armed conflict, the ICRC had undertaken an extensive investigation. Throughout the examination a host of state practices established in international instruments, environmental treaties, military manuals, formal statements, military plans and reports were taken into consideration. Following approximately 10-12 years of in-depth analysis, the protection of the *natural* environment was formally listed as customary law. Conversely, not all States are in agreement with this position.

It is apparent that all of the basic IHL principles: military necessity, distinction, proportionality and humanity are established as CIL. Despite the character of the conflict, whether international or non-international, the lawful application of these principles must be applied relating to the natural environment. Following the ICRC's report submitted to the United Nations General Assembly in 1993, this customary obligation was accepted. More specifically, the report states:

*No part of the environment may be attacked, unless it is a military objective. Destruction of any part of the natural environment is prohibited, unless required by imperative military necessity. Launching an attack against a military objective which may be expected to cause incidental damage to the environment which would be excessive in relation to the concrete and direct military advantage anticipated is prohibited.*²⁹²

²⁹² ICRC(2005:143): *Customary International Humanitarian Law, Volume: Rules*. United Kingdom: Cambridge University Press. Rule 43. (emphasis mine)

The ICRC's position is that the *natural* environment is protected under customary international law. Yet, there are some considerations regarding its practical application. Similar to other rules highlighted before, the first consideration is *if* the *natural* environment is considered as a *civilian object*. If the natural environment is viewed in this manner, it would be provided a measure of special protection under the *distinction* principle – and henceforth, create a customary pause in the targeting process.

Another consideration, as a customary rule, it is unlawful for the belligerent to destroy *property* that is not justified by imperative military necessity. Any violation of this basic rule may constitute a grave breach under GCIV. The International Court of Justice affirms, “Respect for the *environment* is one of those elements that go into assessing whether an action is in conformity with the principle of necessity.”²⁹³

If the target is deemed a military necessity, the collateral damage upon the *natural* environment *must not* be excessive to the direct military advantage anticipated. In other words, it must be *proportionate*. ICJ maintains that “in order to satisfy the requirement of proportionality, attacks against military targets which are known or can reasonably be assumed to cause grave *environmental* harm may need to confer a very substantial military advantage in order to be considered legitimate.”²⁹⁴

By some scholars, the *natural* environment is plainly being substituted through concepts of the *civilian object* and *property*. Even so, there are unsettling concerns in relation to the language being used to secure the protection of these specifically protected objects. For instance, certain expressions are open to reflection and interpretation, such as imperative *military necessity*, *may be expected*, *excessive* and *anticipated*. Clearer understandings of these above

²⁹³ ICRC(2005:145): *Customary International Humanitarian Law, Volume I: Rules*. United Kingdom: Cambridge University Press.

²⁹⁴ ICRC(2005:146). *Customary International Humanitarian Law, Volume I: Rules*. United Kingdom: Cambridge University Press. (emphasis mine)

expressions should receive further attention in order to sharpen the overall meaning and application in relation to these terms and therefore, the protection preferred.

It is also currently argued that the *natural* environment is offered *indirect* and *direct* protection under CIL. Mirroring the language of Additional Protocol I, there are special objects that should receive an added protection. In terms of indirect methods of protection, for instance, there are particular works and installations containing dangerous forces, namely *dams*, *dykes* and *nuclear electrical generating stations*, and other installations located at or in their vicinity that are *not* to become the object of attack. Once more, these are *not* totally immune from attack and the protection of these vital infrastructures may cease based on the principle of military necessity.

In addition, ICRC has proposed two rules which provide *direct* protection to the *natural* environment as a matter of customary international law. Attempting to resolve concerns of conflict characterization, it has been suggested that these rules are applicable in *all* armed conflict, whether international or internal.²⁹⁵ The following rules place *limitations* on methods and means of warfare, as well as, their *effects* upon the natural environment.

Rule 44 states:

Methods and means of warfare must be employed with due regard to the protection and preservation of the natural environment. In the conduct of military operations, all feasible precautions must be taken to avoid, and in any event to minimize, incidental damage to the environment. Lack of scientific certainty as to the effects on the environment of certain military operations does not absolve a party to the conflict from taking such precautions.²⁹⁶

Rule 45 states:

²⁹⁵ ICRC(2005:147). *Customary International Humanitarian Law, Volume: Rules*. United Kingdom: Cambridge University Press.

²⁹⁶ ICRC(2005:147). *Customary International Humanitarian Law, Volume: Rules*. United Kingdom: Cambridge University Press. (emphasis mine)

The use of *methods* or *means* of warfare that are intended, or may be expected, to cause *widespread, long-term* and *severe* damage to the natural environment is prohibited. Destruction of the natural environment *may not* be used as a weapon.²⁹⁷

Dinstein validates the customary viewpoint that upon launching an attack “environmental considerations *must* play a role in the targeting process.”²⁹⁸ And it is clear, that from a proposed customary position both anthropocentric and biocentric perspectives are being taken into consideration. Reinforcing the point, whether the civilian population is present or *not*, it is not allowed to cause environmental harm if it is expected to be excessive in relation to the military gain anticipated.²⁹⁹ Dinstein explains however, that after such environmental considerations and *proportionality* is observed, “An attack against a military objective is liable to produce legitimate collateral damage to the environment.”³⁰⁰

According to Roberts, the US Administration was opposed to these rules regarding protection to the natural environment stating that “it was too broad and ambiguous and is not part of customary law.”³⁰¹ Dinstein adds that he does *not* take a CIL standpoint in connection with Additional Protocol I Articles 35(3) and 55(1). He admits that these rules did constitute an innovation in IHL, but the adoption of these provisions “to be accepted as part and parcel of customary international law.... is wrong.”³⁰² The argument was supported in connection with the 1996 Nuclear Weapons Advisory Opinion, as Dinstein states:

...the provisions of the Protocol 'provide additional protection for the environment' and '[t]hese are powerful constraints for all the States having subscribed to these provisions.' Surely, States which have not subscribed to these provisions (by becoming contracting Parties to the Protocol) are not bound by these constraints. In other words, the relevant Protocol's clauses have not yet crystallized as customary international

²⁹⁷ ICRC(2005:151): *Customary International Humanitarian Law, Volume: Rules*. United Kingdom: Cambridge University Press. (emphasis mine)

²⁹⁸ Dinstein, Yoram (2004:177): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States. Cambridge University Press. (emphasis mine)

²⁹⁹ Dinstein, Yoram (2004:177): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States. Cambridge University Press.

³⁰⁰ Dinstein, Yoram (2004:177): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States. Cambridge University Press.

³⁰¹ Roberts, Adam. (2002:69): *The Law of War and Environmental Damage. The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom. Cambridge University Press.

³⁰² Dinstein, Yoram (2004:185): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States. Cambridge University Press.

law.³⁰³

The above-mentioned statement was provided before the ICRC's comprehensive study in 2005. Further research and attention regarding the status of these rules as a matter of customary law is recommended, as it should enhance protection of the *natural* environment in wartime.

Apart from the controversy of its universal acceptance as CIL, the *natural* environment is gaining respect and momentum toward more protection. Evidence of a piecemeal approach is well-noted in the course of international relations. For example, in 2001, the UNGA declared 6 November "*International Day for Preventing the Exploitation of the Environment in War and Armed Conflict*."³⁰⁴ Recognizing the global shift in environmental conditions and its role as a matter of international peace and security, Secretary-General Ban Ki-moon draws attention to the fact:

As global population rises and the demand for resources grows, the potential for conflicts over resources could intensify. The impacts of climate change may exacerbate these threats. In response, we will need to develop new thinking on sources of insecurity and ensure that our preventive diplomacy takes into account the trans-boundary nature of ecosystems and environmental degradation.³⁰⁵

Aiming to elevate the dictates of the public *environmental* conscience, during the 2nd IUCN World Conservation Congress in 2000, an environmental edition of the Martens Clause was formally adopted. UN member states were asked for their support in good-faith to observe and respect:

Until a more complete international code of *environmental* protection has been adopted, in cases not covered by international agreements and regulations, the biosphere and all its constituents elements and processes remain under the protection and authority of the principles of international law derived from established custom, from dictates of the public conscience, and from the principles and fundamental

³⁰³ Dinstein, Yoram (2004:185): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

³⁰⁴ United Nations General Assembly, Res. 56/4

³⁰⁵ *International Day for Preventing the Exploitation of the Environment and in War and Armed Conflict* [online] <http://www.un.org/en/events/environmentconflictday/>, (retrieved 03 December 2010)

values of humanity acting as steward for present and future generations.”³⁰⁶

It is central to underscore with respect to protection of the *natural* environment that there are a handful of states which have earned a reputation as “persistent objectors.”³⁰⁷ In particular, France, the United Kingdom and the United States have been considered the main dissenters with regard to customary rule 45 and the widespread, long-term and severe threshold. Meanwhile it is also important to stress that there are numerous states that *do* consider these rules as CIL.

It seems imperative to also reflect upon how the voice of each state is heard and weighed in the midst of international relations. As for the present time, it has been expressed that the opinion of some states seem to prevail over the interests of others, and sometimes it is regarding important issues that remain in the best interest of the international community, as a whole.

From a theoretical standpoint, realism and liberalism seem interlocked in an environmental affair. Some nations appear resistant to offering added protection to the natural environment, while others clearly support the development of its customary position. Yet, there is another creeping concern in this interlocked battle. Lust for power is increasingly shared with non-state actors in modern warfare. This point of view is a serious problem that is particularly alarming in contemporary times and should place added considerations upon states with respect to IHL’s ability to protect the natural environment in NIAC.

The possible view of a new form of imperialism seems to overshadow recent wartime events. Albeit the international community of states has expressed the desire to attain sustainable development, there is an incontestable element of dependency amid war-torn societies being imposed by some military significant “western” nations. Some *other* nations, predominately Arab and African states,

³⁰⁶ Resolution 2.97 A Marten’s Clause for environmental protection adopted by the 2nd IUCN World Conservation Congress (Amman, 2000) (emphasis mine)

³⁰⁷ ICRC(2005:151). *Customary International Humanitarian Law, Volume: Rules*. United Kingdom: Cambridge University Press.

are being left crippled by collapsed infrastructures, minimal aid, and toxic wastelands caused by the *widespread, long-term* and *severe* damage unto the *natural* environment. According to Chamorro, “NATO countries insisted on more freedom to produce collateral damage, while developing countries had argued for restrictions.”³⁰⁸ From a postmodernist position, the urge arises to reconsider – what is *development* and who actually is it for?

Nevertheless, there is a force more powerful than any nation state or alliance; it is the force of Mother Nature. Illumined by swift change of environmental disaster, the spirit of good will and international co-operation of many states have been realizing the value of universal *green* interest. Indeed there are persistent objectors; however, customary international law is formed by the general practice of *all* states. For that reason, as a body of international law, the entire international community has an opportunity to develop customary legal protection of the *natural* environment in both peacetime and wartime. With each judicial decision and secondary advisory opinion exercised in favor to protect the *natural* environment on national, regional and international fronts, its customary recognition is strengthened. And since prevention is better than cure, forethought preferable than afterthought, it is a strength that is needed to combat the predicted environmental challenges ahead.

4.7 Additional Texts

In addition to the aforesaid legal sources, there are several other international instruments which aim to protect the *natural* environment in wartime. Some discernable paths toward additional protection are established though *limitations* concerning the *physical, biological* and *chemical* elements under disarmament law. Although these elements are addressed through specific Conventions, for

³⁰⁸ Chamorro, Susan P. and Hammond, Edward. (2001): *Addressing Environmental Modification in Post-Cold War Conflict. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements*. Washington, D.C. USA: The Edmonds Institute.

example, the Convention on Conventional Weapons (CCW), the Biological Weapons Convention (BWC) and the Chemical Weapons Convention (CWC), the space herein is too limited. However, it would have been fascinating to explore these treaties in more detail as it could likely establish a direct link to General Verri's formal definition of the *natural* environment. And since this component is claimed missing, it presents an interesting area for further research.

Even so, it is important to discuss two additional texts. The first treaty is relevant because it prohibits the use of the *natural* environment as a weapon of war. The second is essential because it relates to the development of *widespread, long-term* and *severe* damage to the natural environment as a war crime under the Rome Statute of the International Criminal Court (ICC).

4.7.1 The ENMOD Convention

During the Vietnam War (1966-1972), there was a top secret US military mission called *Operation Popeye*. Throughout this period, nearly 47,000 units of cloud-seeding materials were used to cause persistent rainfall to hamper the enemies' movement. Not only did this *military activity* spark the human imagination as geophysical warfare became possible, but also it ignited the need to create a new international agreement among states. For what was once believed as science fiction was now dawning as a potential reality – the *natural* environment was being used as a *weapon of war*.

Accordingly, the *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* (the ENMOD Convention) was adopted by the United Nations on 10 December 1976. Although the ENMOD Convention was a post-factum development, which historically is a common trait of international law, the treaty provided the first set of legal provisions concerning environmental warfare.

On the alert of lurking environmental threats being entertained inside the military industrial complex, the ENMOD Convention sought-after a strict prohibition on environmental warfare tactics. Primarily, the agreement set forth the prohibition on particular geophysical warfare tactics, such as artificial earthquakes, climatic modification, crop destruction, hurricanes, tsunamis, weather manipulation and more.

Why is the ENMOD Convention a vital link to sustainable development? The reason is simple. Some *military activities* that are considered as an ENMOD violation are: the alteration of the ionosphere, eradication of species, introduction of invasive species, manipulation of the ozone levels, provoking flood or drought, use of herbicides, seeding clouds, setting fires and deforestation.³⁰⁹ As an instrument of disarmament law, the establishment of this international treaty was considered visionary and *precautionary* because geophysical modification did not factor significantly into military planning at that time. Although ratified by more or less 70 countries, the ENMOD Convention is claimed to be largely unknown and unenforced.³¹⁰

The ENMOD Convention protects the *natural* environment as it ultimately halts its manipulation and *use* as a weapon of war. On the other hand, ENMOD does *not* protect the natural environment from ‘collateral damage’ caused by other military activities in general. To constitute a violation, there are three criteria which establish the magnitude of environmental damage under ENMOD; this is known as the widespread, long-term, severe threshold or ‘troika’.³¹¹ According to the ENMOD Convention, *one* of the following criteria “*widespread, long-lasting or severe effects*” must result and be scientifically proven from the environmental modification technique (EMT) employed.

³⁰⁹ Chamorro, Susan P. and Hammond, Edward. (2001): *Addressing Environmental Modification in Post-Cold War Conflict. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements*. Washington, D.C. USA: The Edmonds Institute.

³¹⁰ Machlis, Gary E. and Hanson, Thor (2008:734): *Warfare Ecology*. BioScience. Vol. 58 No. 8

³¹¹ Chamorro, Susan P. and Hammond, Edward. (2001): *Addressing Environmental Modification in Post-Cold War Conflict. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements*. Washington, D.C. USA: The Edmonds Institute.

Article I stipulates:

Each State Party to this Convention undertakes not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party.³¹²

The threshold of harm set forth in ENMOD Article I, unlike Additional Protocol I, is accompanied by a set of clear understandings. These terms are defined as follows:

Widespread is defined as encompassing an area on the scale of several hundred square kilometers; *long-lasting* is defined as lasting for a period of months, or approximately a season; and *severe* is defined as involving serious or significant disruption or harm to human life, natural and economic resources or other assets.³¹³

Considering that these are two significant treaties aiming to protect the *natural* environment in wartime, Bouvier argues that the ENMOD Convention and API are complementary, but some tricky problems could arise.³¹⁴ One problem is that the threshold of permissible harm has different meanings associated between the two instruments.

As mentioned before, Additional Protocol I uses the term *long-term* which permits environmental damage for *decades*, possibly twenty to thirty years. In contrast, ENMOD uses the term *long-lasting* which permits environmental damage for only a period of *months* or approximately a *season*. Regarding the temporal scope, this provides a notable difference with respect to permissible harm onto the natural environment.

Additionally, under ENMOD the three criteria are disjunctive. This implies that through the use of “*or*,” only *one* element of ‘widespread, long-lasting or severe’

³¹² *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* (ENMOD Convention, adopted by the United Nations on 10 December 1976) Art. 1.1

³¹³ *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* (ENMOD Convention, adopted by the United Nations on 10 December 1976) Art. 2

³¹⁴ Bouvier, Antoine. *Protection of the natural environment in time of armed conflict*. Geneva, Switzerland: ICRC.

is needed to constitute a violation. Additional Protocol I uses the conjunctive “*and*” which suggests *all* three criteria of the threshold must be satisfied.

To enhance protection for the *natural* environment, some scholars argue that the understandings from ENMOD should offer an interpretative sight as to what the *limitations* should represent with reference to API. In opposition, it has been established that ENMOD “is not intended to prejudice the interpretation of the same or similar terms if used in connection with any other international agreement.”³¹⁵

Jensen upholds, however, that the WLS standard should be discarded and a strict liability standard should be applied. He adds that “it is *not* unreasonable to advocate changes to terms that were molded almost thirty years ago at a time when warfare's effects on the environment were not so potentially catastrophic. Military commanders *must* consider the environmental repercussions of all military operations.”³¹⁶

The First Review Conference had affirmed that ENMOD Article II was *adequate* to fulfil the purposes of the Convention.³¹⁷ It states that the term *environmental modification techniques* (EMT):

...refers to any technique for changing – through the deliberate manipulation of natural processes – the dynamics, composition or structure of the Earth, including its biota, lithosphere, hydrosphere and atmosphere, or of outer space.”³¹⁸

In light of the language of Article II, a few other considerations arise. Dinstein claims that the military action proscribed *must be intentional*, and consist of the manipulation of natural processes causing widespread, long-lasting or severe effects. He also underscores that “if these *effects* are not produced, the use of an

³¹⁵ *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* (ENMOD Convention, adopted by the United Nations on 10 December 1976)

³¹⁶ Jensen, Eric T. (2005:173): *The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*. Vanderbilt Journal of Transnational Law. Vol.38:145(emphasis mine)

³¹⁷ First Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques. (1984:3) ENMOD/CONF.I. /13/1

³¹⁸ *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* (ENMOD Convention, adopted by the United Nations on 10 December 1976) Art. 2

environmental modification technique (albeit hostile) would be excluded from the scope of the prohibition.”³¹⁹

Whether offensive or defensive, in order to be forbidden the environmental modification technique employed must be *military* or *hostile*.³²⁰ If the military or hostile use causes widespread, long-lasting or severe destruction, damage or injury to the natural environment, it must have been inflicted by another contracting party to the agreement to constitute a violation.³²¹

Important to note, not all environmental modification techniques are prohibited. Its use is considered as ‘*dual-use*’ purpose. For instance, modifications to the natural environment can be used for peaceful purposes. The ENMOD Convention recognized that modification techniques may have the potential to ‘improve’ the relationship between man and nature as it may perhaps “contribute to the preservation and improvement of the environment for the benefit of present and future generations.”³²² That in mind, environmental modification techniques could present a remarkable *vital link* to rethink prospective and harmless uses of the natural environment toward the attainment of sustainable development. As ENMOD Article 3 (2) set forth an alternative vision to warfare:

States Parties in a position to do so shall contribute, alone or together with other States or international organizations, to international economic and scientific co-operation in the preservation, improvement, and peaceful utilization of the environment, with due consideration for the needs of the developing areas of the world.³²³

Indeed a visionary statement toward the achievement of environmental wellbeing, however, the ENMOD Convention has other shortcomings. During the Second Review Conference it has been suggested to establish ENMODs

³¹⁹ Dinstein, Yoram (2004:179): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

³²⁰ Dinstein, Yoram (2004:178). *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

³²¹ Dinstein, Yoram (2004:179-180). *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

³²² *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* (ENMOD Convention, adopted by the United Nations on 10 December 1976)

clarification in scope. Toward wider coverage of environmental protection, it was recommended that an EMT should be one regardless of the specific technique employed or its technological sophistication³²⁴ and that unless some of these understandings are dealt with, such as, the “deliberate manipulation of natural processes,” the ENMOD Convention will remain “for all practical intents and purposes, inapplicable.”³²⁵

On the whole, the ENMOD Convention is deemed *inadequate* in the protection of the *natural* environment. For instance, firstly, its span of protection excludes weapon development and testing. Secondly, the language regarding modification techniques is claimed to be too vague, the scope is too narrow, the threshold of harm is too high and the verification mechanism is too weak.³²⁶ Thirdly, ENMOD requires a scientific assessment of the environmental damage, which basically implies that if there is a lack of scientific knowledge with respect to a particular ecosystem, it can hinder a viable assessment.³²⁷ Chamorro claims that a “true extent of environmental damage can *never* be known in an ecosystem not fully characterized *before* the damage is done.”³²⁸

In addition to these shortcomings, the ENMOD Convention does *not* provide the necessary provisions to penalize contracting parties in violation of its terms. Instead, HCPs are expected to develop the suitable laws for implementation and

³²³ *Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques* (ENMOD Convention, adopted by the United Nations on 10 December 1976) Art. 3(2)

³²⁴ *Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques*. Geneva, 14-21 September 1992

³²⁵ *Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Use of Environmental Modification Techniques*. Geneva, 14-21 September 1992

³²⁶ Chamorro, Susan P. and Hammond, Edward. (2001): *Addressing Environmental Modification in Post-Cold War Conflict. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements*. Washington, D.C. USA: The Edmonds Institute.

³²⁷ Chamorro, Susan P. and Hammond, Edward. (2001): *Addressing Environmental Modification in Post-Cold War Conflict. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements*. Washington, D.C. USA: The Edmonds Institute.

³²⁸ Chamorro, Susan P. and Hammond, Edward. (2001): *Addressing Environmental Modification in Post-Cold War Conflict. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements*. Washington, D.C. USA: The Edmonds Institute. USA (emphasis mine)

sanctions.³²⁹ Notwithstanding, even *if* environmental damage occurred which met all of the above conditions, the procedure for complaint is dependent upon the Security Council and accordingly, subject to veto.³³⁰ Concerning ENMODs practical effect, the Government of Jordan states:

...ENMOD was revealed as being painfully *inadequate* during the Gulf Conflict. We find that the terms of the existing convention are so broad and vague as to be virtually impossible to enforce. We also find no provision for a mechanism capable of investigation and settlement of any future disputes under the Convention. Furthermore, The Convention does not provide for advanced environmental scientific data to be made available to all States at the initial stages of crisis prevention. Proposal for an effective mechanism to combat the exploitation of the environment in times of armed conflict...we believe that this may lead to the drafting of a new treaty, and we trust that any such treaty would give all humanity the confidence to face a more peaceful future.”³³¹

In the meantime, it has been stated that the only way protection of the *natural* environment is possible in armed conflict is *if* participation in the ENMOD Convention and Additional Protocol I is universal.³³² As of today, it is not.

As we produce more and more technology, and as we recognize the constant generation of all sorts of unexpected effects, we clearly have a duty to guard more and more against what is almost a complete unknown. We have no way of foreseeing those cases in which *laws of nature* and new phenomena will interact in a single technological achievement in a harmful or even catastrophic way. Are we then culpable if we introduce new technology in this ignorant way?³³³

4.7.2 Rome Statute of the International Criminal Court

With the adoption of the Rome Statute of the International Criminal Court on 17 July 1998, the institutional capacity and jurisdiction to prosecute “the most serious crimes of concern to the international community as a whole”³³⁴ was created. The Rome Statute as of 12 October 2010³³⁵ has 114 States Parties which

³²⁹ Environmental Law Institute. (1998:8): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

³³⁰ Brauer, Jurgen. (2000:33). “*The Effect of War on the Natural Environment*.” Augusta State University.

³³¹ Adede, Andronico O. (1994:172) “*Protection of the Environment in Times of Armed Conflict: Reflections on the Existing and Future Treaty Law*.” Annual Survey of International & Comparative Law Vol.1: Iss. 1, Article 7

³³² ICRC(2003). “*Advisory Service on International Humanitarian Law. 1976 Convention on the Prohibition of Military or any Hostile Use of Environmental Modification techniques*.” Geneva, Switzerland: ICRC.

³³³ Ekeli. (2004:425). (emphasis mine)

³³⁴ Drumbl, Mark A. (2001:1). *International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?* ISLA Journal.

³³⁵ International Criminal Court [online] <http://www.icc-cpi.int/Menus/ASP/states+parties/>, (retrieved 31 October 2010)

is comprised of: 31 African States, 15 Asian States, 18 Eastern European States, 25 Latin American and Caribbean States, and 25 Western European and other States.³³⁶

This level of international participation reflects an increasing interest toward developing enforcement mechanisms for IHL. Taking into account that there is a total of 192 UN Member States, a notable gap remains in universal enforcement of the laws of war. Strikingly, once more, among the 78 States *not* Party to the Rome Statute are some of the most military significant states of the world.

Nevertheless, the institutional development for enforcement is a meaningful addition to the international legal framework. On substantive and procedural fronts, the destruction of the *natural* environment is recognized as a prosecutable war crime. Although it is merely *one* out of 128 legal provisions, Drumbl emphasizes that “for the first time, environmental war crimes are independently sanctioned and an apparatus is provided for the punishment of those who commit such crimes.” Even so, he adds, the inclusion of environmental crime into the International Criminal Court’s jurisdiction is still a “cause for limited celebration and some disappointment.”³³⁷ Rome Statute Article 8 (2)(b)(iv) stipulates:

Intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated.³³⁸

Generally speaking, there are a few reasons for the limited celebration of the Rome Statute. Foremost is that the law being set forth is applicable only in an international context. Therefore, environmental war crimes that may be caused during an internal conflict would not fall under the ICC’s jurisdiction. Thus in

³³⁶ International Criminal Court [online] <http://www.icc-cpi.int/Menus/ASP/states+parties/>, (retrieved 31 October 2010)

³³⁷ Drumbl, Mark A. (2001:14): “*International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?*” ISLA Journal.

³³⁸ The *Rome Statute* of the International Criminal Court (1998) Article 8 2b,iv

the event of such an armed conflict, the *natural* environment remains vulnerable to the various methods and means of an eco-criminal.

Jensen argues that the opportunity was made available to add the necessary clarification and resolve current ambiguities needed to enforce environmental protection during wartime, but the opportunity was missed.³³⁹ One of the relevant ambiguities in need of further clarification was in relation to the *widespread*, *long-term* and *severe* threshold of harm; however, no definition was provided.

Considering that the Rome Statute was “silent on this point,” the International Law Commission (ILC) set forth that the terms *widespread*, *long-term* and *severe* describe the “extent or intensity of the damage, its persistence in time, and the size of the geographical area affected by the damage.”³⁴⁰

The “widespread” and “long-term” principles attempt to ascribe temporal and geographic limitations to environmental harm which, for the most part, does not know such boundaries. As the planet constitutes one single ecosystem, one part of the earth ultimately affects the entire planet. The “severe” requirement could mean that damage to an isolated section of the global commons whose natural resources have not yet been valued by the global financial markets could escape punishment; and this notwithstanding its biodiversity or species of importance.³⁴¹

Dinstein also notes some gaps in the protection for the *natural* environment. The first gap entails the elements of *intention* and *knowledge* of an outcome, rather than intention or expectation as expressed under Additional Protocol I. In addition, the damage caused to the natural environment must be *clearly excessive* to the military advantage anticipated to be considered a ‘war crime’.³⁴²

The language used seems to grant an upper-hand toward military gain, as it *must* be proven that the HCP had both intention and knowledge. These elements are

³³⁹ Jensen, Eric T. (2005:175): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict*.” Vanderbilt Journal of Transnational Law. Vol.38:145

³⁴⁰ Drumbl, Mark A. (2001:5): “*International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?*” ISLA Journal.

³⁴¹ Drumbl, Mark A. (2001:5): “*International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?*” ISLA Journal. (emphasis mine)

³⁴² Dinstein, Yoram (2004:186): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States Cambridge: University Press.

needed to establish the required *mens rea* to impose penal sanctions.³⁴³ In fact, Drumbl asserts that all three components *must be proven*:

- (1) physical act or actus reus, an attack which causes "widespread, long-term and severe damage" to the natural environment;
- (2) damage must be "clearly excessive" in relation to the "concrete and direct overall military advantage anticipated"; and
- (3) mental element or mens rea, *must* be demonstrated, thereby entailing proof that the attack was launched intentionally and in the *knowledge* it will cause "widespread, long-term and severe damage" to the natural environment.³⁴⁴

It is now reasonable to ask if the military commanders and combatants are equipped with scientific environmental data to carry out their targeting decisions properly. For without this element of *knowledge*, it seems that environmental ignorance can likely become the high contracting parties "get out of jail free card." In fairness, it is unreasonable to expect military commanders or combatants to be ecologists! In my view, this is an area of constant concern and therefore, it should require the further development and integration of intelligence fields. A sort of "*environmental intelligence*" (EI) is perhaps a meaningful and logical step for the future generations.

With respect to the ICC, in order to enhance protection of the *natural* environment under the Rome Statute, there have been a few suggestions made. The first proposal is to amend Article 8 by removing the distinction between international and internal conflict and therefore, prevent unnecessary procedural problems.³⁴⁵ Secondly, in view of the fact that the *effect* must be *intended* or *foreseeable*, it might not deter significant environmental harm. Drumbl claims that the majority of damage being done to the *natural* environment is caused by negligent or reckless conduct. He suggests that in order to address this concern that an objective element needs to be incorporated into the intentionality

³⁴³ Dinstein, Yoram (2004:186): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States: Cambridge University Press.

³⁴⁴ Drumbl, Mark A. (2001:4): "*International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?*" ISLA Journal. (emphasis mine)

³⁴⁵ Willmott, Deidre. (2004): "*Removing the Distinction Between International and Non-International Armed Conflict in the Rome Statute of the International Criminal Court*." Melbourne Journal of International Law. Vol. 5.

requirement and that responsibility should be placed where there is a ‘*reasonable expectation*’ that environmental damage could occur, as within API.³⁴⁶ Otherwise, it may not actually deter criminal behaviour, which is what the International Criminal Court intends to do.³⁴⁷

In addition, it seems that another opportunity has been missed. The Rome Statute does not grant *special protection* for the natural environment by expressly identifying it as a *civilian object*. Jensen maintains that although the Rome Statute makes intentional damage to the environment a war crime, it is prosecutable only if it is done as “part of a plan or policy or as part of a large-scale commission of such crime.”³⁴⁸

The only attempt ever made to prosecute environmental war crimes was at the Nuremberg trials for the offence of scorched earth tactics; however, tribunals have limited power in such matters. It is believed that permanent institutions, for instance, the International Court of Justice or International Criminal Court are needed to replace ad hoc tribunals in order to provide a consistent and meaningful approach toward addressing the environmental consequences in wartime, particularly in a non-international context.³⁴⁹

As discussed earlier, there are various *indirect* and *direct* methods of attempting to protect the natural environment. Indirectly speaking, under the Rome Statute, some protection is being granted through the prohibition on the excessive destruction of property, use of poison, use of indiscriminate weapons, and depriving of civilians of objects indispensable to their survival.³⁵⁰

³⁴⁶ Drumbl, Mark A. (2001:8-11): “*International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?*” ISLA Journal. (emphasis mine)

³⁴⁷ Drumbl, Mark A. (2001:14). “*International Human Rights, International Humanitarian Law, and Environmental Security: Can the International Criminal Court Bridge the Gaps?*” ISLA Journal.

³⁴⁸ Jensen, Eric T. (2005:175): “*The International Law of Environmental Warfare: Active and Passive Damage During Armed Conflict.*” Vanderbilt Journal of Transnational Law. Vol.38:145

³⁴⁹ Environmental Law Institute. (1998:20): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives.* Research Report. Washington D.C. 10-12 June.

³⁵⁰ Rome Statute of the International Criminal Court, 17 July 1998 (8(2)(b)(xiii); (xvii); (xx) (xxv))

Regarding the direct methods of protection, the widespread, long-term and severe threshold of harm has limitations in its application which seem consistent with the concerns expressed under Additional Protocol I. However, there are other important concerns which surround the meaningful application of the law. Some of these grey areas involve the requirement of intent and knowledge of the environmental destruction, the lack of environmental expertise within the criminal court, a lack of political will, and other procedural hurdles. In fact, in view of these shortcomings or perhaps considering that these are pragmatically the early stages of the development of the law in these matters, “no state has ever been held accountable for environmental destruction, and no individual has ever been convicted of environmental war crimes.”³⁵¹ Weinstein believes that it is a reflection of *values* amid the international community of states.

Regardless, the value of environmental matters is undoubtedly increasing amid the public conscience. This is evident following the case of the Gulf War, as there was clear disregard for the unlawful destruction of the natural environment. Locke once believed that “those who break the law are a threat to us all, as they will tend to undermine our peace and safety.”³⁵² Rio Declaration stated that “*peace, development and environmental protection* are interdependent and indivisible.”³⁵³ Although the expressed aim of the Rio Declaration is a non-binding instrument, it may still provide useful insights. Without justice, there is no peace. Without peace, there is no development. And ultimately, without meaningful protection for the *natural* environment in wartime the attainment of sustainable development is unlikely. This is yet another *vital link* between international humanitarian law and sustainable development. With state responsibility toward the common interest of global justice, Our Common Future advises:

³⁵¹ Weinstein, Tara. (2005): *Prosecuting Attacks that Destroy the Environment: Environmental Crimes or Humanitarian Atrocities*. Georgetown International Environmental Law Review.

³⁵² Wolff, Jonathan. (2006:20): *An Introduction to Political Philosophy*. USA: Oxford University Press.

³⁵³ United Nations Conference on Environment and Development (1992). *Rio Declaration*. Principle 25.(Earth Summit Rio de Janeiro. 19th plenary meeting. (emphasis mine)

Sustainability requires the enforcement of wider responsibilities for the impacts of decisions. This requires changes in the legal and institutional frameworks that will enforce the common interest. Some necessary changes in the legal framework start from the environment *adequate* for health and well-being is essential for all human beings – including future generations.³⁵⁴

³⁵⁴ World Commission on Environment and Development (1987:63): *Our Common Future*. Oxford: Oxford University Press. (emphasis mine)

5. The Development of Meaningful Protection for the Natural Environment in Wartime

5.1 The Character of the Conflict

On the topic of protection for the *natural* environment during hostilities, the *character of the conflict* is an essential distinction to reconsider. It is also a *vital link* between international humanitarian law and sustainable development because it determines the applicable law governing hostilities, and therefore, the level of protection granted. In other words, there are different rules which apply in different conflict settings. As it stands now, the protection of the *natural* environment is *not* consistent throughout the framework of IHL.

One main reason that an inconsistency arises within international humanitarian law is because of the prerequisite to categorize conflict. In the event of an armed conflict, there are three different classifications to consider: an international armed conflict (IAC), a non-international armed conflict (NIAC) and matters of internal disturbance.

Why is this so important? It is important because the amount of protection for the *natural* environment is based upon *how* the conflict is characterized. In the first classification as an international armed conflict, there is some *direct* protection being afforded to the *natural* environment under Additional Protocol I, if states are high contracting parties. In the second classification as a non-international or internal armed conflict, the protection being afforded is merely *indirect*. Finally, in the third classification as a matter of internal disturbance, such as, riots or hostilities of a lesser degree, IHL is *not* applicable.

The characterization of an international armed conflict is when a formal declaration of war is made or when armed force is being used between two or

more States.³⁵⁵ It is also considered an IAC when part or an entire territory of a state is being occupied, whether that occupation meets resistance or not, or when individuals rise to fight against alien occupation, colonial domination or racist regimes in the struggle toward the fulfilment of their right to self-determination.³⁵⁶ During an international armed conflict, the applicable laws are: the Geneva Conventions, Additional Protocol I, customary international law and related conventions. However, it is important to recall that regarding the application of Additional Protocol I and related conventions only the States Parties are obliged.

More elusive, the characterization of a non-international armed conflict is sometimes more challenging to make a distinction. ICRC highlights that one distinguishing characteristic of an internal conflict is that one conflicting party is a non-state armed group or organized armed group (OAG).³⁵⁷ Additionally, it is considered an internal conflict when one organized armed group fights another within the territory of a state; however, the conflict could cross jurisdictional borders. During times of internal armed conflict, the applicable laws are: Additional Protocol II, Common Article 3, customary international law and related conventions.³⁵⁸ Similar to treaty law requirements of Additional Protocol I, only the States Parties are obliged under Additional Protocol II and related conventions.

A key concern is that the qualification of the conflict character is not always an easy distinction to make. For instance, *when* does a matter of internal disturbance reach the level of violence in order to become classified as a non-international armed conflict? Moreover, the conflict characterization could change between an international and non-international, dependent upon the parties involved at that

³⁵⁵ ICRC. (2009:8) Exploring Humanitarian Law. IHL Guide, A legal manual for EHL teachers. Geneva, Switzerland.

³⁵⁶ ICRC. (2009:8) Exploring Humanitarian Law. IHL Guide, A legal manual for EHL teachers. Geneva, Switzerland.

³⁵⁷ ICRC. (2009:8) Exploring Humanitarian Law. IHL Guide, A legal manual for EHL teachers. Geneva, Switzerland.

³⁵⁸ ICRC. (2009:8) Exploring Humanitarian Law. IHL Guide, A legal manual for EHL teachers. Geneva, Switzerland.

time. Thus, the rules which govern hostilities must also adapt to the conflict at hand, while targeting decisions are often taken in matters of a split second. Case in point, according to the ICTY Appeal Chamber:

The conflict could have been characterized as both internal and international, or alternatively, as an internal conflict alongside an international one, or as an internal conflict that had become internationalized because of external support, or as an international conflict that had subsequently been replaced by one or more internal conflicts, or some combination thereof.³⁵⁹

As stated above, when the characterization of a conflict is branded as *internationalized*, it simply implies that an intervention has occurred by one or more foreign states, as discussed in the Kosovo case. In particular, NATO had intervened during a non-international armed conflict, and therefore the conflict became an *internationalized* one. Be that as it may, this changing nature presents added complexities, as not all states are high contracting parties to Additional Protocol I and therefore the determination of the laws applicable presents more complications in the protection of the *natural* environment. How should IHL apply in these cases?

In the end, it all boils down to the general idea that the *natural* environment is virtually *unprotected* during a non-international armed conflict. During a NIAC, the ICC lacks jurisdiction and, as a result, ‘environmental war crimes’ remain unassailable within the territory of a state. The principle of *national sovereignty* remains both a matter of international respect and concern. As the belligerents with the territory of a state may not have the appropriate means of deterrence and thus, environmental damage which may arise from internal conflicts may escape matters of criminal responsibility, unless the damage becomes a transboundary concern.³⁶⁰ As Ehrlich emphasizes regarding the sovereignty principle:

The difficulty in changing the rule in international relations is uncertainty about the best way to achieve disarmament and security in a world where in the past security

³⁵⁹ Willmott, Deidre. (2004): “*Removing the Distinction Between International and Non-International Armed Conflict in the Rome Statute of the International Criminal Court.*” Melbourne Journal of International Law. Vol. 5.

³⁶⁰ Chamorro, Susan P. and Hammond, Edward. (2001): *Addressing Environmental Modification in Post-Cold War Conflict*. The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD) and Related Agreements. Washington, D.C. USA: The Edmonds Institute.

has been usually provided by brute force either threatened or overtly exercised. The basic requirement is evident: once again it is a change in human attitudes so that the in-group against which aggression is forbidden expands to include all human beings. The first step necessarily involves partial surrender of sovereignty to an international organization.³⁶¹

In a court of law, the prosecution is required “to establish the nature of relevant armed conflict in *every* case of alleged war crimes.” The International Criminal Tribunal for the former Yugoslavia (ICTY) demonstrated several inefficiencies associated with this prolonged task of providing evidence and arguments for the conflict character where the alleged crimes were said to have been perpetrated in *each* case.³⁶² To overcome these complex hurdles in the prosecution of war crimes, Wilmott put forward to *remove* the distinction of the conflict character.

What is inhumane, and consequently proscribed, in international wars, cannot but be inhumane and inadmissible in civil strife.³⁶³

The removal of the distinction of the character of the conflict should provide a more meaningful protection to the *natural* environment in wartime. Additionally, it should also provide a more realistic platform for sustainable development. For instance, Roberts emphasizes that a substantial amount of environmental damage from *military activities* has led to vital sustainability concerns such as famine, inhospitable land, toxic pollution and other *physical* limitations upon the landscapes such as the employment of anti-personnel mines.³⁶⁴

Not only in an IAC, but also during a NIAC, the damage to the natural environment caused by military activities could become a *vital link* to national security and consequently, sustainability of the state. Former Secretary of the Air Force, Verne Orr believes that “future warfare may not exist in the traditional

³⁶¹ Ehrlich, et al. (?) *Ecoscience: “Population, Resources, Environment. Rich Nations, Poor Nations and International Conflict. The Human Predicament: Finding a Way Out.”* W.H. Freeman and Co. San Francisco

³⁶² Willmott, Deidre. (2004): “*Removing the Distinction Between International and Non-International Armed Conflict in the Rome Statute of the International Criminal Court.*” Melbourne Journal of International Law. Vol. 5. (emphasis mine)

³⁶³ Willmott, Deidre. (2004): “*Removing the Distinction between International and Non-International Armed Conflict in the Rome Statute of the International Criminal Court.*” Melbourne Journal of Law. Vol. 5.

³⁶⁴ Roberts, Adam. (2002:75): *The Law of War and Environmental Damage. The Environmental Consequences of War. Legal Economic, and Scientific Perspectives.* Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom. Cambridge University Press.

sense. It may be nothing more than well-organized and coordinated terrorism, perpetrated by highly dedicated and heavily armed terrorist on a mass scale.”³⁶⁵

According to Houchins, if modern warfare tactics has changed or in effect has blurred the IAC/NIAC battlefield, “international law may apply to individuals through their nationality.”³⁶⁶ However, the problem or *precautionary* concern becomes that “with increased travel and financial means for specific terrorist groups, terrorist are abandoning their nationality and taking refuge in other countries. Arguably, international law should apply through the care-taking country to the harboured terrorist, but that connection to terrorists and international law seems tenuous.”³⁶⁷ Within the past few decades the international community has unquestionably had to reconsider its internal and external affairs in light of this persistent threat. The Environmental Law Institute affirms:

Failure to address internal conflicts can lead to future conflicts, as wartime environmental devastation can reduce the ability of a nation's infrastructure to satisfy basic needs of its citizenry, thereby destabilizing the country.³⁶⁸

In an effort to provide improved expressions and therefore enforce a more practical approach to protect the *natural* environment in wartime, some recommendations were made with reference to the Rome Statue of the ICC. It is believed that the following revisions might be of assistance to the international community in overcoming some procedural hurdles, and as such, create a more efficient and effective framework to encourage a more meaningful environmental protection of states.

³⁶⁵ Houchins, Captain Deborah (2003:3): “*Extending the Application of the ICJ's July 8, 1996 Advisory Opinion to Environment-Altering Weapons in General: What is the Role of International Environmental Law in Warfare?*” Major Report CI02-924. University of Utah.

³⁶⁶ Houchins, Captain Deborah (2003:40-41): “*Extending the Application of the ICJ's July 8, 1996 Advisory Opinion to Environment-Altering Weapons in General: What is the Role of International Environmental Law in Warfare?*” Major Report CI02-924. University of Utah.

³⁶⁷ Houchins, Captain Deborah (2003:40-41): “*Extending the Application of the ICJ's July 8, 1996 Advisory Opinion to Environment-Altering Weapons in General: What is the Role of International Environmental Law in Warfare?*” Major Report CI02-924. University of Utah.

³⁶⁸ Environmental Law Institute (1998:19): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

Besides removing the conflict character distinction, another proposal aims to remove the distinction between ‘grave breaches’ and ‘serious violations.’ The ICTY Appeals Chamber states that “grave breaches are only committed in an international armed conflict and that persons or *property* will only be ‘protected’ during an international armed conflict.”³⁶⁹ Once more, it appears that a lack of integration is hampering meaningful protection for the natural environment.

Additionally, it has been proposed to merge Articles 8(2)(a) and 8(2)(c) in order to consolidate offences into a single list of war crimes applicable in *all* armed conflicts, whether international or internal.³⁷⁰ In support of streamlining such endeavours, it has been suggested that Articles 8(2)(d) and 8(2)(f) should be deleted, and the ICTY Appeals Chamber definition of armed conflict utilized:

An armed conflict exists whenever there is a resort to armed force between States or protracted armed violence between governmental authorities and organized armed groups or between such groups within a State.³⁷¹

Naturally the prospect of an environmental war crime is not only possible during an international armed conflict, but also in a non-international context. Evidence of such environmental threats has been well-noted in the previous cases studied of the Gulf War and Kosovo Conflict. In view of that fact, the prerequisite of *conflict characterization* should be dissolved in order to establish the necessary means to protect the *natural* environment, which is an indispensable constituent to both national security and sustainable development. Other inconsistencies which prevent the meaningful application and legal enforcement of IHL should also be re-evaluated as the *natural* environment is a vital concern of not only national, but also regional and international peace and security. Recognizing the need for a compatibility and integration of the law, the Expert Group affirms:

³⁶⁹ Willmott, Deidre (2004): “*Removing the Distinction Between International and Non-International Armed Conflict in the Rome Statute of the International Criminal Court.*” Melbourne Journal of International Law. Vol. 5. (emphasis mine)

³⁷⁰ Willmott, Deidre (2004): “*Removing the Distinction Between International and Non-International Armed Conflict in the Rome Statute of the International Criminal Court.*” Melbourne Journal of International Law. Vol. 5.

³⁷¹ Tadic, Case No IYT-94-1-AR72 (2 October 1995) [70]

The Expert Group regarded the principles of interrelationship and integration as the backbone of sustainable development. It emphasized that interrelationship as a principle contributing to the achievement of sustainable development depends on the respect of each legal domain for the scope and content of adjacent bodies of law and that sustainable development will be enhanced if competing legal rules strive as a first step toward compatibility and as a second step toward mutual support.³⁷²

5.2 The Development of Special Protection

Throughout the framework of IHL a sort of “road map” is offered which grants *special protection* to specific categories of persons and objects. During hostilities, this special protection status is intended to support military commanders in making well-informed targeting decisions. Accordingly, through this guidance the legal framework establishes some added points of principled reflection and duties in the pursuit of legitimate military objectives.

As a general rule, *specifically protected* persons and objects are *not* to become the object of an attack, unless it is deemed an imperative military necessity.³⁷³ However, if the target is perceived as a military necessity, the protection once granted to that particular person or object may become withdrawn. For instance, *special protection* is granted to the cultural and spiritual heritage of peoples. In particular, protected objects such as places of worship, monuments of architecture, works of art or history, archaeological sites, manuscripts, books and other scientific collections³⁷⁴ are formally protected by means of a universal system of emblematic distinctions. For that reason, military command is required to keep informed on the location of specifically protected objects and

³⁷² Giorgetta, Sueli. (2002:182-3): “*The Right to a Healthy Environment, Human Rights and Sustainable Development. International Environmental Agreements.*” Politics, Law and Economics 2: Netherlands: Kluwer Academic Publishers.

³⁷³ ICRC (2005:3): *Essentials of the Law of War*. Offprint of F. De Mulinen Handbook on the Law of War for Armed Forces. Geneva, Switzerland. ICRC.

³⁷⁴ United Nations Educational, Scientific and Cultural Organization: [online] http://portal.unesco.org/culture/en/ev.php-URL_ID=35744&URL_DO=DO_TOPIC&URL_SECTION=201.html, (retrieved 31 October 2010)

establishments.³⁷⁵ These aforesaid are also *not* to be used in support of military efforts or become the object of reprisals.³⁷⁶

Respecting such treasures of civilization, an identification and protection of the cultural and spiritual heritage of peoples was strengthened through The *Hague Convention of 14 May 1954 for the Protection of Cultural Property in the event of Armed Conflict*. In the course of this Convention, a *special protection* for cultural properties was officially established under treaty law. The United Nations Educational, Scientific and Cultural Organization (UNESCO) was properly endorsed with an international mandate for its implementation.³⁷⁷

The approach taken to ensure the implementation for this vision began with a systematic inventory of specifically protected cultural properties. Once identified, the selected locations are registered and then may become marked by an emblematic distinction. Although the absence of an emblem does not permit the attack on such objects or locations, this sign may be utilized to provide informational support in order to better identify the location of a cultural heritage of peoples and thus, offer *special protection* in the event of an armed conflict:



Figure 3: Emblematic distinction of Cultural Property

The present legal framework of IHL or related Conventions does *not* however provide a comparable “road map” for the *special protection* of the *natural* heritage of peoples. Following the mass destruction of World War I, UNESCO was not only mandated with the task of paying special attention to global threats

³⁷⁵ ICRC (2005:7): *Essentials of the Law of War*. Offprint of F. De Mulinen Handbook on the Law of War for Armed Forces. ICRC. Geneva, Switzerland. ICRC.

³⁷⁶ ICRC (1977:37): *Protocols Additional to the Geneva Conventions of 12 August 1949*, Art. 53(b,c)

³⁷⁷ Gasser, Hans-Peter(1993:14): *International Humanitarian Law: An Introduction*. Geneva, Switzerland. ICRC.

concerning the cultural and spiritual heritage of peoples, but also the *natural* heritage.³⁷⁸ Enshrined within the Convention concerning the Protection of the World Cultural and Natural Heritage, Article 6 (2) states:

The States Parties undertake, in accordance with the provisions of this *Convention*, to give their help in the *identification*, *protection*, *conservation* and presentation of the cultural and *natural* heritage...³⁷⁹

In a proactive pursuit toward the fulfilment of its international mandate, UNESCO currently lists 704 cultural, 180 natural and 27 mixed natural/cultural properties in 151 States Parties which have been declared as holding an “outstanding universal value.”³⁸⁰ In view of that, these exceptional sites have been aesthetically assessed, scientifically appraised, clearly identified and visibly mapped as part of the world heritage list.³⁸¹ As of June 2010, a total of 187 States Parties had ratified the 1972 World Heritage Convention.³⁸² With this significant level of participation among the States Parties, clearly it is an indication toward the overall interest and value of such an initiative. As part of an international pledge among States Parties, the World Cultural and Natural Heritage Convention states:

The Convention sets out the duties of States Parties in *identifying* potential sites and their role in *protecting* and *preserving* them. By signing the Convention, each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage.³⁸³

But now, what happens in the event of an armed conflict? There is a concerted effort to protect the cultural and spiritual heritage of peoples on the battlefield, but what about the *natural*? UNESCO has undertaken an effort to categorize and protect world natural heritage sites, such as: tropical rainforests, traditional

³⁷⁸ UNESCO: [online] http://portal.unesco.org/culture/en/ev.php-URL_ID=34323&URL_DO=DO_TOPIC&URL_SECTION=201.html (retrieved 2 December 2010)

³⁷⁹ Convention Concerning the Protection of the World Cultural and Natural Heritage (1972), Art. 6(2) (emphasis mine)

³⁸⁰ World Heritage List: [online] <http://whc.unesco.org/en/list/>, (retrieved 2 December 2010)

³⁸¹ World Heritage List: [online] <http://whc.unesco.org/en/list/>, (retrieved 2 December 2010)

³⁸² World Heritage List: [online] <http://whc.unesco.org/en/list/>, (retrieved 2 December 2010)

³⁸³ World Heritage Convention(1972): [online] <http://whc.unesco.org/en/convention/>, (retrieved 2 December 2010) (emphasis mine)

forests, endangered species habitats, protected national parks, glacial lakes, coral reefs, biosphere reserves, safari areas, caves and mountainous areas, freshwater wetland ecosystems, vegetations, wildlife and diverse species habitats and a variety of other sensitive ecosystems and ecological processes which are considered rich in biological and ecological diversity. Many of these locations are regarded as hosting special qualities which contribute to the overall wellbeing of ecosystems, and the planetary system as a whole. For instance, the Amazon Rain Forest, Yellowstone National Park, Coiba National Park and its Special Zone of Marine Protection, and the Great Barrier Reef³⁸⁴ are presently listed, to name just a few. There are various aesthetic and scientific reasons that UNESCO endeavours to draw attention to such rare and distinctive elements of the world's natural heritage. These natural heritage sites are foreseen as global natural treasures for *all* humankind. Accentuating a need to protect *natural* heritage sites from harm, the Convention Concerning the Protection of World Cultural and Natural Heritage states:

Each State Party to this Convention undertakes not to take any deliberate measures which might damage *directly* or *indirectly* the cultural and *natural* heritage referred to in Articles 1 and situated on the territory of other States Parties to this Convention.³⁸⁵

Considering that *special protection* is established for the cultural and spiritual heritage of peoples under IHL, but *not* the *natural* heritage, this should present a deep concern for sustainable development. It is convincing that the identification and protection granted toward the cultural and spiritual heritages of peoples is a *vital link* to human wellbeing, and therefore a direct contribution toward the global aim of SD. However, what about the world's *natural* heritage of peoples? How might these *natural* treasures, such as tropical rainforests, national parks, endangered species habitats and other sensitive ecosystems be protected under IHL? Is it possible that IHL currently grants more protection to cultural art or museums in comparison to vital global ecosystems? Simply put – it seems so.

³⁸⁴ World Heritage Convention(1972):[online] <http://whc.unesco.org/en/list/> , (retrieved 2 December 2010)

One of the most significant threats facing the world today is ecological. In the contemporary line of sight, there is the strong concern of global climatic change, acid rain, contamination of atmospheric conditions and soil, toxic waste disposal and massive deforestation. The core problem is that these potential dangers not only cause distress for a particular part of the world; they threaten the stability of the entire planet.

Falk reaffirms that four interconnected threats facing the planet are wars of mass destruction, pollution, overpopulation, and the depletion of natural resources. Decades ago, the concern was raised “of the need to protect the global environment and lay down new principles and rules...addressing the environmental impact of state activity.”³⁸⁶ In addition, Dinstein forewarns that environmental modification can be inflicted by conventional methods and means of warfare from the systematic destruction by fire of the Amazon River Basin rainforests which could induce a global climatic change.³⁸⁷

In view of these potential environmental threats to the international community, if states adhere to taking *all* precautionary measures, it seems that the development of *special protection* for the natural environment is the next logical advancement in IHL. For practical purposes, an expansion in the legal framework could assist military commanders in the proper identification of natural heritage sites. As a result, it should provide a practical method to better distinguish important areas of the natural environment in the event of an armed conflict. Not only might the added support provide the basic environmental intelligence proclaimed to be lacking during military operations today, but it should also assist in the reduction of unnecessary collateral damage onto the

³⁸⁵ Convention concerning the Protection of the World Cultural and Natural Heritage (1972), Art. 6(3) (emphasis mine)

³⁸⁶ Giorgetta, Sueli. (2002:176): *The Right to a Healthy Environment, Human Rights and Sustainable Development*. International Environmental Agreements: Politics, Law and Economics 2: Netherlands: Kluwer Academic Publishers.

³⁸⁷ Dinstein, Yoram (2004:181): *The Conduct of Hostilities under the Law of International Armed Conflict*. United States. Cambridge University Press.

natural environment. Otherwise, how else could it be possible to grant such protection? Bruch maintains:

IHL...has expanded to protect not only combatants, but also prisoners of war, the civilian population, property, and historical and cultural monuments. Now that the law of war recognizes not only humanitarian concerns, but also our material, cultural and aesthetic legacy, it is a small leap to propose and "environmental law of war."³⁸⁸

5.3 Distinctive Emblem for the Natural Environment

In peacetime, there are numerous aspects of the natural environment properly identified and protected. In wartime, on the other hand, it is quite a different story. Although previously stated that the natural environment is an object of special protection during hostilities, there are no real means for its practical identification or protection throughout the entire legal framework of IHL.

For this reason, without the necessary means toward the proper identification of specifically protected *natural* environments, it is reasonable to consider that widespread, long-term and severe environmental harm might arise pertaining to *disproportionate*, *indiscriminate*, and *inhumane* attacks in the event of armed conflict. Without a clear distinction for natural environments of special significance, the fundamental principle of military necessity clearly does *not* have the means to ensure its proper application required in order to uphold the other customary practices of IHL. This is a relevant weakness of IHL. Without this clear-cut indication of specifically protected *natural* environments, there is no effective means to implement obligatory countermeasures to respect and to ensure respect of IHL. As a consequence, unnecessary collateral damage may arise unto the natural environmental from ill-informed military operations.

It is important to keep in mind that transboundary environmental harm may also arise and affect neutral countries that are not party to the conflict, as highlighted in all of the collective case studies above. This simple fact should warrant a

careful attention, as it is a common interest amid matters of international relations. As it stands now, the international community of states and its peoples, still seem to have an ‘unfinished system’ of environmental protection. Hence, it is my view that the overall framework needed to attain SD is *incomplete*.

For the purpose of this Convention, international protection of the world cultural and *natural* heritage shall be understood to mean the *establishment of a system* of international co-operation and assistance designed to support States Parties to the Convention in their efforts to conserve and identify that heritage.³⁸⁹

Since the start of IHL, a *system* of universal communication and co-operation began with a ‘*sign*’. Nowadays it is straightforward practice in the facilitation of a common system of identification and special protection on the battlefield. Nation-states worldwide have adopted *emblematic distinctions* to pinpoint a range of military/civilian medical services, military/civilian religious personnel, civil defense, cultural objects, and works and installations containing dangerous forces, such as dams, dykes, and nuclear power plants.³⁹⁰ On the other hand, the *natural* environment now foreseen as a fundamental constituent toward the attainment of sustainable development has no current means to facilitate its identification or protection. This finding is a *vital link* between IHL and SD which may be worthy of further consideration and development.

Without a *foreseeability* element in plain position regarding the *precaution* of concealed environmental threats, it is reasonable to deduce that the effective deterrence mechanisms or subsequent means to promote prosecution will not likely transpire. If prospective *grave* or *serious* environmental damage cannot be *foreseen*, how then could the *intent* be demonstrated in order to enforce criminal prosecution? The Environmental Law Institute has confirmed that “existing and emerging norms generally require that the military commander *intend* the environmental damage or should have known that it would occur (that the

³⁸⁸ Bruch, Carl E. Introduction. (2000:5): *The Environmental Consequences of War. Legal Economic, and Scientific Perspectives*. Edited by Austin, Jay E. and Bruch, Carl E. United Kingdom. Cambridge University Press.

³⁸⁹ Convention Concerning the Protection of the World Cultural and Natural Heritage (1972), Art. 7 (emphasis mine)

damage was reasonably foreseeable).³⁹¹ Based on this analysis, there appears to be a fundamental missing link within the legal framework of IHL, which ultimately, imposes a direct threat toward securing the underlying conditions necessary to uphold the international target of sustainable development. Richard Gamble claims:

Intelligence...image, electronic and human...is essential to determine which target poses an environmental threat, and which weapon to use to eliminate the target. One *must* know the weak points that make a target vulnerable, and the features that can be environmentally dangerous. Failure to obtain this information may result in an environmental disaster.³⁹²

Regarding the current legal framework of IHL, this vital intelligence component is seemingly absent. However, there are various advancements still being made within related institutions that may be utilized in the development and eventual dependability of added protection concerning the natural environment. Based on the critical assessment thus far, it seems that the military commanders, the international legal system and the global community as a whole, could benefit from the better integration of such knowledge by means of an *environmental intelligence system* (EIS) in partnership with a new universal emblematic distinction for the *natural* environment. For example, in an effort to better manage the global commons, Our Common Future has suggested:

Nations could deploy the latest satellite mapping and other techniques to put together an inventory of these resources and then monitor changes in them.³⁹³

Perhaps it is a wheel that may not need reinvention; it implies more reflection on improved means for international co-operation, institutional integration and systematic implementation. As previously revealed through the concerted efforts

³⁹⁰ ICRC.(2005:2): *Essentials of the Law of War*. Offprint of F. De Mulinen Handbook on the Law of War for Armed Forces. Geneva, Switzerland:ICRC.

³⁹¹ Environmental Law Institute. (1998:7-8): *Addressing Environmental Consequences of War. First International Conference on Addressing Environmental Consequences of War: Legal, Economic, and Scientific Perspectives*. Research Report. Washington D.C. 10-12 June.

³⁹² Gamble, Richard O., LCDR, CEC, USN. (1992:24-25): *Anti-Environmental Warfare: Protecting the Environment During Wartime*. Naval War College. Newport, RI, USA (emphasis mine)

³⁹³ World Commission on Environment and Development (1987:266): *Our Common Future*. Oxford: Oxford University Press.(emphasis mine)

of UNESCO, UNEP and other relevant institutions, this pressing need for pooled environmental intelligence might be leveraged using established databases of these compatible institutions. As a result, it may contribute toward a practical harmonizing effort toward global environmental wellbeing in better support of their intended institutional functions.

In wartime, as similar to the cultural and spiritual heritage of peoples, the beginning of *specifically protected natural* environments could also then benefit through the identification and mapping through a *new* and *universal* distinctive emblem. It has been recommended to point to environmental related concerns by the use of a *Green Cross*, however, in the past; the emblematic selection of the Red Cross had encountered disparities based upon perceived religious connotations. If history should repeats itself in this matter, then perhaps other emblems such as the ‘Green Crescent or Green Crystal’ may need to be adopted in order to assemble a truly *universal green system*.

In an attempt to *unite* and *transcend* these dividing connotations which have plagued world history throughout past generations and figuratively speaking, has been fueling the continual source of chronic conflicts, herein I would like to suggest an alternative solution. To better protect the *natural* environment in the event of an armed conflict, I would like to propose a new *universal distinctive emblem*.



Figure 4: Proposed Distinctive Emblem for the Natural Environment

The time has now arrived to provide an emblematic representation toward the protection of the *natural* environment in armed conflict. If specifically protected cultural heritage sites, such as, cultural artwork and museums are presently valued, marked and protected, the next appropriate step seems to reconsider the formal inclusion of *natural* heritage sites, such as, protected areas, endangered species habitats, fragile ecosystems and other pertinent locations? It is part of our individual and collective moral and increasingly, legal responsibility to protect and *care* for the future generations. Considering that the *natural* environment sustains *all* life on Earth, perhaps, it is now time to signify the thought, even in wartime. Hobbes has suggested:

For reason, in this sense is nothing but reckoning (that is adding and subtracting) of the consequences of general names agreed upon for the *marking* and *signifying* of our thoughts; I say *marking* them when we reckon by ourselves, and *signifying*, when we demonstrate or approve our reckonings to other men.³⁹⁴

³⁹⁴ Hobbes, Thomas.(1994:22): *Leviathan*, with selected variants from the Latin edition of 1668. Edited with Introduction by Edwin Curley. Canada. Hackett Publishing Company, Inc. (emphasis mine)

6. Conclusion

Considering the realities of modern warfare, the conclusion is that the protection of the *natural* environment in the event of an armed conflict is *inadequate*. Several notable weaknesses have been identified regarding the substantive and institutional inadequacies within the law of war regime.

In the early twentieth century, international humanitarian law did not initially express rules, principles and customs to alleviate the calamities of war relative to the natural environment. However, toward the end of the century, there were new enemies approaching the battlefield. It was the prevailing threat of ecocides and eco-criminals. Traditionally, IHL has developed in light of post-war reflections and has also extended its purpose to heed the call of environmental protection. Nevertheless, in periods of being confronted with the reality of widespread, long-term and severe environmental destruction – none of the IHL rules had enough force to prevent, protect or enforce environmental war crimes. There are several notable weaknesses inherent in IHL.

The first one is a clear inability to formally define what the natural environment actually *is*. Clarification and consensus are needed to prevent interpretative disagreements and boost protection. Three elements offering insight toward the establishment of a formal working definition are – the *physical*, the *biological* and the *chemical*. Concerning the dual-use purpose of these elements in light of modern warfare, it would be pertinent to reconsider the development of the environmental intelligence and institutional capacities in order to attend to related emergency responses. These capabilities should be underscored and considered as a vital link to sustainable development.

The second notable weakness of IHL is a general tendency to consider the human person and the natural environment as separate matters of legal concern. Although *biological solidarity* between the human person and natural environment has been

established almost a century ago, the compounding damages are apparently not being reflected in balancing tests or matters of criminal responsibility.

The third weakness noted is that although there is a customary prohibition of *poison* or employment of *arms*, *projectiles*, or *material* of a nature to cause superfluous injury, it seemingly has not offered prevention or protection from harm in these cases studied. Some military significant states have demonstrated an inherent manipulation of IHL and other states have ignored compliance obligations in these matters. As such, the principle of national sovereignty could become a notable weakness in the overall international legal framework. There remains strong concern about the illegality of military activities and impunity of environmental war crimes.

Fourthly, IHL provisions offer assorted methods to protect the *natural* environment, but their practical use is debatable. The main legal texts have established both *indirect* and *direct* methods toward protection; however, none has proven effective in each case studied. At the present time, the establishment of strict limitations on the destruction of the natural environment remains questionable in relation to geographical area, temporal scope and severity of the harm.

Regarding *direct* methods under Additional Protocol I and the ENMOD Convention – the WLS threshold of harm is considered *inadequate*. Terminological imprecision is one main drawback. In its cumulative position as *widespread*, *long-term* and *severe* damage, the legal threshold of harm is generally viewed as too high. In addition, environmental damage would need to be scientifically proven. For that reason, a recurrent dilemma is the lack of environmental baseline data, as well as related instruments and methods to calculate and value the environmental damage that has been inflicted. Another complication in the overall damage assessment is the inability to separate peacetime and wartime damage in order to draw accurate conclusions to support liability claims.

It seems that ecosystem inventories or *natural* heritage sites records are central toward the establishment of environmental baseline data. This element of an environmental

intelligence system would seem to be required toward the overall aim in the deterrence or prosecution of future environmental war crimes.

Fifthly noted, the ENMOD Convention is the only treaty to protect the natural environment from being used as a weapon of war; however, it has low-adherence and is virtually unknown and unenforced. In its current position, the vague language regarding modification techniques, narrow scope, lack of penal provisions and legal mechanisms to conduct proper investigations remains a concern. Considering that related violations are climatic modification, eradications of species, manipulation of ozone levels, and deforestation, the significance of geophysical warfare, it provides a clear link of importance toward the sustainable development agenda. Since ENMOD violations require scientific assessment of alleged environmental damage, its prospective enforcement should also benefit from the development of ecosystem inventories. The ENMOD Convention would be strengthened by universal ratification and improved international co-operation to ensure its full respect, implementation and compliance. On a positive note, it would also be interesting to ascertain the possibilities of its dual-use capabilities toward the peaceful utilization of the natural environment.

Sixthly noted, the natural environment will *not* be adequately protected simply because of the military necessity doctrine. This position seems based on the realism of IHL in practice and necessitates further reconsideration in view of contemporary environmental challenges. It is a solution that should transcend individual state interest in order to establish a meaningful platform based on collective rationality through disciplined military culture of precaution and state responsibility.

In addition to IHL principles, although these are part of customary international law applicable in *all* armed conflict, there is a notable weakness regarding a means to formulate practical balancing tests. It is essentially flawed. It is my conclusion, that the meaningful application of IHL principles will require the representation of the natural environment in order to be executed properly because there is no efficient and effective means to distinguish areas of ecological significance. The development of special protection and a distinctive emblem for the natural environment should be reconsidered

toward strengthening the legal framework in order to properly uphold and enforce the legitimacy of IHL.

The next weakness is that there are specific rules in wartime which offer *direct* protection to the natural environment; however, disparities remain among states with regard to these environmental provisions as a matter of customary international law. Enhancing protection of the natural environment from a customary position remains in the general practice of states to establish evidence confirming its normative position accepted as law. On a positive note, it has been confirmed that the *natural* environment is a customary obligation regarding the application of IHL principles, although the particular rules remain in question.

Elements of *intentionality* and *foreseeability* are crucial in the effectiveness of environmental protection in wartime. Environmental intelligence established through the cooperation of international institutions that may inform military command real-time and surmount national sovereignty interests, seem essential in the proper enforcement of IHL to impartially ensure global environmental justice. This sphere of development presents an indispensable constituent toward the attainment of sustainable development as well as the legitimacy and respect for the law of war regime.

Presently a “*green road map*” for military commanders to distinguish geographical locations of ecological significance on the battlefield does not exist. For example, protected areas, sensitive ecosystems and other vital aspects of the natural world are impossible to differentiate. In conclusion, I would like to suggest the consideration of leveraging and integrating existing environmental databases. For example, UNESCO and UNEP could provide meaningful platforms toward the creation of a tangible system and perhaps, reopen the discussion for environmental protection in wartime. Natural heritage sites are a common concern of the international community of states, and although there can be no guarantees with respect to environmental destruction in wartime, it is clear that these natural heritage sites could likely have an impact which extend beyond the combat zone in space and time.

Considering that a significant portion of recent military expenditure shall be invested in advanced communication technologies, it would be interesting to envisage UNESCOs natural heritage sites as well as other pertinent areas of national interests as part of an *environmental intelligence system*. Specifically protected natural environments could be electronically positioned via Global Positioning System, and therefore made readily available to inform military forces in command.

Another notable weakness is that the direct protection of the natural environment is not consistent throughout the legal framework. The prerequisite to determine the character of the conflict places a tough demand regarding the qualification of a conflict character and hence an application of the law. Since it is a matter not set in stone and swift to change between an international and internal conflict, the protection of the natural environment is virtually dependent on the conflict character. International armed conflict should provide some *direct* and *indirect* protection under Additional Protocol I. The protection granted during a non-international or internal conflict could range from some *indirect* under Additional Protocol II to none at all under Common Article 3. The character of the conflict remains an important matter to reconsider for sustainable development. The recommendation is to remove the distinction between the conflict type in order to overcome procedural hurdles and to better protect the *natural* environment in light of the modern warfare challenge.

In sum, international humanitarian law is a *vital link* to sustainable development. Although IHLs sole purpose is to set limitations upon the methods and means in warfare, and protect persons not participating or no longer participating in the conflict, this aim toward protection cannot ignore the indispensable role of the natural environment. It is my conclusion that the destruction of the natural environment needs stricter limitations.

The law should protect. That is what it is designed to do, prevent us from harm. Based on this critical assessment of IHL, the current legal framework is

inadequate in the protection of the *natural* environment in wartime. As Jean-Jacques Rousseau reminds the public's conscience:

How many crimes, how many wars, how many murders, how many misfortunes and horrors, would that man have saved the human species, who pulling up the stakes or filling up the ditches should have cried to his fellow: Be sure not to listen to this imposter, you are lost, if you forget that the fruits of the earth belong equally to us all, and the earth itself to nobody!³⁹⁵

³⁹⁵ Rousseau, Jean-Jacques. (2007:59) *Discourse on the Origin of Inequality*

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